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Title of Dissertation: The Effects of Prenatal Expectations on Postpartum Outcomes in Lamaze-prepared Women

Margaret v. Wideman Ames: Doctor of Philosophy, 1985

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## ABSTRACT

This dissertation examined the prenatal expectations for medication usage during parturition of Lamaze-prepared women, and the effects of both their realization and non-realization on a number of factors associated with childbirth. A total of 58 primiparous women who were enrolled in Lamaze classes were interviewed both prenatally and at approximately 2 weeks postpartum. The prenatal evaluation consisted of a number of items designed to assess a woman's expectations for medication during parturition and the extent to which a drug-free delivery was important to her. Responses on these items were used to classify women into expectation categories. A total of 29 (50%) women were classified as expecting no medication and 29 (50%) were classified as expecting medication.

Within 2 weeks postpartum, women were asked to indicate the types of chemical interventions received and to respond to items

designed to assess the effects of these interventions on satisfaction with the overall childbirth experience, with Lamaze preparation, with the attending obstetrician, desires for social support, and postpartum complaints. In addition, items used to assess the relationship between satisfaction with the husband's performance and marital satisfaction were administered at this time.

The results of the analyses suggest that only about 40% of Lamaze-prepared women will experience a delivery consonant with their expectations, and less than 10% of the women who anticipate a drug-free delivery actually deliver without medication.

Those women whose expectations for delivery were not met were significantly less satisfied with their overall childbirth experience than those women whose expectations were realized. In addition, personal responsibility for Lamaze outcomes was related to desire for social support, and number of postpartum complaints. Dissatisfaction with the husband's performance during parturition was significantly related to marital dissatisfaction in the postpartum period.

Although the nonrealization of expectations was anticipated to adversely affect satisfaction with psychoprophylactic preparation, no significant interaction effects were found between conditions on those items designed to assess satisfaction with the training. Similarly, women in all conditions appeared to be equally likely to intend to utilize the same obstetrician for future deliveries.

# THE EFFECTS OF PRENATAL EXPECTATIONS ON POSTPARTUM OUTCOMES IN LAMAZE-PREPARED WOMEN

by
Margaret von Bardeleben Wideman Ames

Dissertation submitted to the Faculty of the Department of Medical Psychology Graduate Program of the Uniformed Services University of the Health Sciences in partial fulifillment of the requirements for the degree of Doctor of Philosophy 1985

DEDICATION

To my mother,
who gave me my first experience with birth,
To my father,
who gave me my first experience with labor and delivery,
And to Nonnie,
the Grand mother of us all.

ACKNOWLEDGEMENTS

The pursuit of a doctoral degree is seldom easy. Mine was no exception. Fortunately, a great many people invested their time, energy, and expertise to help me achieve this milestone in my life. In particular, I wish to express my deepest gratitude to the members of my dissertation committee, Dr. Sheryle Alagna, Dr. L. Wayne Hess, Dr. Patricia Morokoff, Dr. Andrew S. Baum, and Dr. Jerome E. Singer. Were it not for their advice, guidance, and interest, I might still be a graduate student when I become eligible for Social Security benefits.

I would especially like to recognize three men who worked as hard for this degree as I did: Andy Baum, my undergraduate advisor, graduate professor, confidante, and friend; Jerry Singer, my graduate advisor, mentor, inspiration, and "Dutch Uncle"; and Ron Ames, my husband, "better half", emotional support, and most loyal fan. My thanks and love go to each of you.

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# CHAPTER ONE

## INTRODUCTION

Psychologists have traditionally been concerned with child cognitive development. The past few decades have seen an expansion of the scope of this interest to include such areas as social interaction, sexuality, and health-related behaviors which may also impact upon the development of the individual. However, the effects of psychoprophylactic preparation for parturition, an area which incorporates each of these topics and is likely to have a significant effect upon both the individual and the family, has received attention by only a handful of psychologists and physicians. A review of Psychological Abstracts from 1960 to 1980 and a computer-compiled data base revealed only 12 articles on the indexed topics. A search through Index Medicus from 1960 to 1980 yielded similar results - only 15 relevant publications. It seems curiously inappropriate that an event which is both as common and as important as preparation for child delivery be overlooked by members of these professions.

It is likely that the use of psychoprophylactic preparation is related to certain beliefs held by the participants concerning the use or need of anesthesia for pain relief during labor and delivery. The extent to which these beliefs are realized and the effects of both the realization and nonrealization of such expectations may significantly affect actions and attitudes concerning pregnancy, parturition, the child, the self, the husband, and the health care providers. This

dissertation presents an investigation into one aspect of the parturition process, namely the psychological effects of a psychoprophylactic delivery. It is divided into five sections. Section one briefly describes the parturition process and both the pharmacological and nonpharmacological techniques that have been developed to facillitate coping with its discomfort. The review is focused on Lamaze (psychoprophylactic) preparation and presents the history of the method, its components, a description of those studies which have examined this form of child delivery, and the possible psychological mechanisms which may be operating within its presentation. Section two includes the goals and hypotheses of the present study, and the rationale for each, and the analyses by which these hypotheses were tested. The third section describes the methodology of the study and Section four presents the results of the analyses. Finally, a discussion of these results, their possible implications, and the conclusions they suggest are presented in Section five.

## The Parturition Process

At approximately 266 days after conception, or 280 days after the first day of the mother's last menstrual period, the parturition process begins. The muscle fibers in the walls of the uterus begin to contract and to stretch the opening at the neck of the uterus, the cervix, until it is 10 centimeters in diameter. Concommitantly, the top, or fundus, of the uterus tightens to propel the baby down the birth canal. Contractions increase in both duration and intensity until the baby and the tissues that have nurtured it are delivered.

Although the physiological processes that characterize

parturition have been documented, the stimuli for the commencement of labor contractions are not fully understood. Similarly, those instances in which the process will be interpreted as painful cannot always be predicted. However, the idea that pain is associated with child delivery has existed for centuries (Melzack, 1984; Tanzer & Block, 1976), and Melzack (1984) writes that the average rating of intensity of labor pain is exceeded only by those for causalgia in chronic-pain patients and the amputation of a digit in acute-pain patients. Because of this intensity, a number of techniques have been developed to help ameliorate the discomforts of labor and delivery.

## Analgesia and Anesthesia

Morton demonstrated the use of ether for pain relief during surgery in 1846 (Wideman & Singer, under review). Within a few years, chloroform and ether were also introduced to provide anesthesia for, among other procedures, "painless deliveries" (Myers & Myers, 1979). Other pharmacologic agents ultimately became available to aid in managing labor: morphine and scopolamine in 1902 to produce "twilight sleep," the barbiturates in 1924 to produce sedation, and cocaine and its derivatives in 1925 to produce numbness (Wideman & Singer, under review).

Currently, there are two major classes of medication for pain relief during childbirth, analgesics and anesthetics. Analgesics induce a state of insensibility to pain without loss of consciousness and are administered orally, intramuscularly, or intravenously. Anesthetics induce a loss of sensation to an area, part of the body, or to the entire body and are likely to be inhaled, injected into the body once, or administered continuously with the use of a catheter.

Although there are no statistics as to the actual extent of their implementation, pharmacologic agents appear to be a commonly used technique for alleviating the discomforts of labor and delivery.

However, a number of studies have determined that many of the agents used during parturition may adversely affect both the mother and the neonate (Corke, 1977; Endler, 1980; Field & Widmayer, 1980; Grossman, 1980; Hilman, Hilman, & Dodson, 1979; Kron, Stein, & Goddard, 1966; Meis, Reisner, Payne, & Hobel, 1978; Merkow, McGuinness, Erenberg, & Kennedy, 1980; Moir, 1980; Myers & Myers, 1979; Pakter, Schiffer, & Nelson, 1979; Petrie, Paul, Miller, Arce, Paul, Nakamura, & Hon, 1974; Scanlon, Brown, & Weis, 1974; Teramo & Widholm, 1967; Vasicka & Hutchinson, 1964; Zilanti, Salazar, & Aller, 1970). Because of the possible negative effects of analgesic and anesthetic agents, some women may seek to alleviate the discomforts of parturition with minimal or no medication.

## Non-pharmacologic Methods to Reduce the Pain of Parturition

The idea that pain in childbirth may be reduced without drugs is not a new one. Since the early 1800's researchers have noted cases in which women proceed through labor and delivery with little or no pharmacologic assistance. Dick-Read (1933) questioned one such woman about her refusal of anesthesia. He wrote that she replied, "It didn't hurt. It wasn't supposed to, was it, Doctor?" (Dick-Read, 1933, p.12).

A number of theories have been offered to explain this phenomenon. Most have resulted in training programs called "methods" of childbirth (e.g., Bradley Method, Brazelton Method, Erna Wright Method), each of which purports to be the key to a comfortable birth.

Although the principles upon which these methods are based are primarily psychological, especially principles developed by Pavlov, the methods have escaped scrutiny by all but a handful of psychologists. Literature about the methods consists mainly of anecdotal reports of someone's experience with one or another training procedure, or "how to" accounts of their components (Beck, Geden, & Brouder, 1979; Beck & Hall, 1978; Bing, 1969; Dick-Read, 1944; Ewy & Ewy, 1970; Felton & Segelman, 1978; Karmel, 1959; Keaveney, 1973; Lamaze, 1970; Nelson, Enkin, Saigal, Bennett, Milner, & Sackett, 1980; Stern, 1971; Wright, 1966). Statistics on the utility of any method of birth preparation are scarce, but recent surveys suggest that the Lamaze, or psychoprophylactic preparation is one of the most widely used forms of childbirth training available today (Wideman & Singer, 1983).

Wideman and Singer (1983) surveyed 400 hospitals throughout the continental United States in an effort to determine the extent to which Lamaze preparation was employed, recommended by physicians, accomodated by hospitals, and characteristics of those women who choose that method of child delivery. Their results indicated that the use of psychoprophylactic preparation is widespread. Of the almost 200 hospitals responding to the survey, 99% reported that they allowed fathers to accompany the mothers into the labor and delivery rooms, 89% reported that they allowed persons other than the father into these same areas, and almost all of the obstetricians affiliated with these hospitals encouraged or recommended psychoprophylactic preparation to their patients. More than 70% of the hospitals reported that more than half of the mothers who delivered at their institutions had undergone Lamaze preparation for their deliveries

even though only 37% of the hospitals offered classes in the training. In addition, the authors found no regional or demographic differences among those women who elected a Lamaze delivery nor were there differences due to either size of city or hospital. Psychoprophylactic preparation would appear to be utilized throughout the United States without regard to income level, ethnic origin, or education level of the participants. However, the results of this survey suggested that while physicians may encourage their patients to participate in a psychoprophylactic training program, a significant number of these women are given some form of anesthesia during parturition. Whether these findings reflect a fault in the theoretical foundation of the training, wide individual differences among the women who elect it, a flaw in the effectiveness of the training, differences regarding the goals of the preparation, the effects of certain obstetrical procedures, or the actual desires of the participants is not evident.

What is evident is that psychoprophylactic preparation is utilized by a significant proportion of the pregnant population in the United States. It is unknown how many women utilize Lamaze preparation as a means of delivering without chemical assistance, how many wish merely to reduce the amounts of drugs they receive, or the extent to which these desires are met. Research in areas other than childbirth suggest that the non-realization of expectations may have a number of negative effects (Brehm, 1966, 1972; Seligman, 1974, 1975; Wortman & Brehm, 1975). Stewart (1982) reports that childbirth preparation may result in intense feelings of guilt, anger, and failure if a woman unexpectedly requires anesthesia or a Caesarean section.

Lamaze preparation consists of a number of classes held during the last trimester of pregnancy. These classes concern the anatomy and physiology of pregnancy, labor and delivery, respiration, relaxation, cognitive restructuring, and distraction techniques designed to help the parturient cope with labor and delivery and to train the labor coach, usually the father of the child. It is likely that the training fosters a set of attitudes and expectations about what happens during childbirth, and the roles of the parturient and the labor coach. Depending upon how well these expectations are met, Lamaze preparation may yield outcomes which are positive or negative. This study will not directly address the question of the efficacy of psychoprophylactic training as the definition of efficacy would seem to vary with the goals of the individual participants. Rather, this investigation will examine the outcomes, both positive and negative, of the expectations and attitudes engendered by Lamaze preparation.

# HISTORY OF LAMAZE PREPARATION

The Lamaze Method of preparation for childbirth evolved from the work of several Russian and European physicians. It began in the 1800's with an interest in hypnosis as anesthesia for surgery which spread from France, to Germany and Austria, and on to Russia. Platanov, a Russian neuropsychiatrist experimented mainly with female doctors and medical students who were about to give birth (in Chertok, 1959, p.31). His results were positive; harmful drugs were avoided and pain reduced, but hypnosis did not prove to be effective on a mass scale and its use was largely abandoned.

Velovsky and his colleagues (Velovsky, Platanov, Ploticher, & Shugon, 1960) wrote that the Russians were still convinced that childbirth was not an inherently painful process. Their conviction was a result of Russian testing of a psychoprophylactic method that substituted conditioning techniques taken from Pavlovian physiology for the hypnosis components of earlier studies. A series of breathing techniques served as the conditioned response to the stimuli of both verbal commands and uterine contractions. This response was thought to initiate an inhibitory process in the cortical region of the brain that significantly reduced the pain of labor and delivery.

This form of psychoprophylactic training was easily practiced on a mass scale and, because of its positive results, was adopted as the official method of childbirth in the Soviet Union in 1951 (Tanzer & Block, 1976). It was in that year that Fernand Lamaze, an obstetrician practicing in a Communist trade union in Paris, visited the Soviet Union for first-hand observation. Lamaze modified the

Russian methodology to suit French standards and returned to Paris with a psychoprophylactic method he called "Accouchement sans Douleur," or "childbirth without pain," known today as the Lamaze Method of preparation for childbirth. By 1960, this method was in use in 44 countries.

## DEFINITION OF LAMAZE PREPARATION

Individual Lamaze classes tend to differ slightly with each instructor and group of students. However, five essential elements are consistently present: information about anatomy and physiology, respiration techniques, conditioned relaxation, distraction (e.g., visual focusing, candies to suck on), and social support from the "coach" (see Wideman and Singer, 1984). Each of these elements is described briefly below.

### Anatomy and Physiology

Lamaze preparation seeks to remove the "fear of the unknown" by dedicating the first of the six to eight class meetings held during the last trimester of pregnancy to a detailed explanation of the physiology associated with birth. The fundamentals of fetal development are presented through a combination of instruction and audiovisual aids and the session concludes with a thorough description and explanation of uterine contractions, stages of labor, and the actual birth process.

### Respiration Techniques

One of the modifications Lamaze introduced to the Russian methodology was the use of rapid breathing during the second stage of labor and panting during crowning and delivery. Lamaze-prepared women are trained to couple their exercises with particular breathing techniques designed to meet the demands of each stage of labor to ensure that the controlled breathing will continuously interact with

the stage of labor.

## Conditioned Relaxation

During subsequent sessions, the concepts of the stimulus-response arc and conditioned response are related to the experience of labor and delivery. Parents are familiarized with the basic concepts of Pavlovian conditioning and told that the stimulus of a contraction is to be interpreted as a signal to relax and begin to work. The coach is trained to serve as the conditioned stimulus; the sound of his or her voice, the particular words used, and the repetition of practice for several weeks are tested for their efficacy during later classes.

## Distraction and Cognitive Restructuring

A woman proceeding through a Lamaze delivery may also use various adjunctive techniques that serve to distract her from the activities of the labor room and provide an additional source of comfort during the stages of the birth process. These techniques include using visual focus and sucking on hard candies, lemon ices, or ice chips. Effleurage (a light abdominal massage), light stroking, or a firm lower back massage may also be administered by the woman's coach.

## Social Support

Another modification Lamaze introduced to the Russian methodology was the enlistment of the father's participation as "coach." Lamaze believed that the father could have great influence on the mother and render significant assistance during labor and

delivery of their child. The coach, presumably and usually the father, attends classes with the mother, oversees her practice at home, and participates during the actual labor and delivery.

Aside from the assurance and treatment provided by the medical staff, the presence of the coach is intended to provide reassurance and confidence as well as feelings of caring and support to the mother.

# RESEARCH REVIEW

Studies reviewed in this section are those few that actually investigated Lamaze preparation. Most of these studies focused their attention on maternal attitude differences found between prepared and nonprepared women, whereas others included other aspects of the delivery procedures such as kinds and amounts of medication used by the two groups, length of labor, and numbers and kinds of complications experienced by Lamaze women as contrasted with those women who elect a more conventional delivery (Felton & Segelman, 1978; Hughey, McElin, & Young, 1978; Huttel, Mitchell, Fischer, & Meyer, 1972; Klusman, 1975; Scott & Rose, 1976; Stewart, 1982; Tanzer & Block, 1976; Zax, Sameroff, & Farnum, 1975). Two studies attempted to explore the effects of psychoprophylactic techniques as a mediator of pain and discomfort - one using nonpregnant subjects (Stevens, 1976a, 1976b), one using pregnant subjects (Melzack, 1984), and two others looked at hypnotic susceptibility levels in trained women (Samko & Schoenfeld, 1975; Samuelly, 1972).

## Maternal Attitudes

Of the five studies that examined the effect of psychoprophylactic training on maternal attitudes toward the self, the father of the baby, pregnancy, and labor and delivery, three reported that there was a significant correlation between the preparation and positive emotions. Tanzer and Block (1976) studied women who had either undergone Lamaze training or employed more common delivery

methods. The experimenters prepared an index score for each woman which consisted of the degree of pain reported and a rating of the birth experience as either positive or negative, and compared these scores for women who attended Lamaze classes (takers) with women who had no training (nontakers). Their results indicated that takers exhibited more positive views toward pregnancy, labor, delivery, themselves, their husbands, and their children than nontakers, especially if husbands were present during labor and delivery. These findings persisted in the postpartum period. In addition, takers reported significantly less recollected pain and generally received less medication than nontakers.

Similar studies by Zax et al. (1975) and Klusman (1975) found comparable results: The trained women had significantly lower anxiety levels, both before and after training, as well as significantly better scores on those items concerning positive attitudes toward the baby. In addition, the prepared women had significantly fewer general anesthesias than their nonprepared counterparts and less than half as many local anesthesias.

Psychoprophylactic training also appears to affect paternal attitudes. In a study designed to assess changes in mothers' and fathers' attitudes toward themselves with regard to beliefs in personal control, Felton and Segelman (1978) reported that Lamaze men tested in the last class had changes toward seeing themselves in control to a greater extent than any of the men in the untrained group.

However, it has been suggested that childbirth preparation may adversely affect attitudes. Stewart (1982) reported that some women who anticipate a drug-free delivery may experience intense feelings of

guilt, anxiety, and failure if pain or complications necessitate the use of anesthesia or a Caesarean section.

## Labor and Delivery

Scott and Rose (1976) sought to determine whether psychoprophylactic training offered measurable physical advantages. The factors explored included length of labor, analgesia and anesthesia, type of delivery, complications, and other aspects of the delivery process. Their results indicated that there were major differences in the amounts of analgesia and anesthesia required or requested. A large number of Lamaze-prepared women received no pharmacologic agents before the actual delivery of the infant, and the total narcotic dose was less than that of the control group.

Similar results were found by Hughey, McElin, and Young (1978). Using the same methodology, the experimenters reviewed the charts of 500 Lamaze-prepared women and those of 500 controls matched for age, parity, income, and educational level. They found no significant differences in amounts or kinds of anesthesia, length of labor, or number of complications. Trained women differed from controls in that they had significantly fewer Caesarean sections; fewer postpartum infections; fewer premature births; fewer instances of toxemia of pregnancy, postpartum hemorrhage, or perinatal mortality; and fewer perineal lacerations. The authors also reported that babies born of Lamaze prepared women generally had higher Apgar scores in both the 1- and 5-minute ratings.

## Pain Tolerance

Stevens (1976a) examined several groups of subjects given a

variety of pain management strategies that were similar to those used during childbirth. These included relaxation, attention focusing, feedback on relaxation, and combinations of these techniques. Subjects were administered cold pressor tests and were asked to endure the pain as long as possible. Stevens reported that, although all the trained groups withstood the procedure better than the placebo group, all strategies involving attention focusing, as well as attention focusing alone, were more effective than the relaxation strategies. The combined attention focusing and feedback relaxation group was the most successful, which leads the author to suggest that prepared childbirth strategies cause psychoanalgesia in their users.

Melzack (1984) assessed the intensity of labor pain in both prepared and nonprepared parturients. Using the McGill Pain Questionnaire, he determined that there were wide individual differences in perceptions of pain during childbirth. Parturients with both a higher socioeconomic level and age tended to report less pain than younger women with a lower annual income, and trained women reported pain of lower intensity than untrained women. The possibility exists that those women who elect Lamaze training, traditionally well-educated members of the upper-middle socioeconic strata (Wideman & Singer, 1983), may represent a biased sample of women who generally tend to have higher pain thresholds. However, the results reported by Melzack (1984) suggest that labor and delivery is an intensely painful experience regardless of whether childbirth preparation techniques are implemented.

## Hypnosis

In a 1972 publication, Samuelly asserted that the repetitive

instructions of psychoprophylactic training are, themselves, exercises in self-hypnosis and suggested that a large group of women who have tried Lamaze preparation be tested for hypnotic susceptibility. He postulated that most of the women who had used this method successfully would prove to be hypnotizable whereas those who had "failed" would prove to be nonhypnotizable.

Samko and Schoenfeld (1975) tested this hypothesis. Their results indicated that hypnotic susceptibility was not significantly related to the mother's attitude toward her overall Lamaze experience, nor was it significantly related to the type of medication received. In addition, women who were rated by their physicians as being relatively successful were not significantly more hypnotizable than those women who were regarded as unsuccessful. In short, the results indicate that hypnotic susceptibility was not significantly related to Lamaze training, nor was it related to the type of experience that a prepared women had.

## Conclusions

Although the studies reviewed here tend to suggest that the Lamaze method may have a positive effect on maternal attitudes toward the self, husband, child, childbirth, and pregnancy, and that the training may be useful in anxiety and pain reduction, factors other than the training itself may have affected the results (i.e., characteristics of the subjects, physician biases).

Many of the studies based their findings largely upon self-report measures taken after delivery. Standley and Nicholson (1980) caution that the recollection of newly delivered women are often very different from the events that actually occurred. Their

results indicated that new mothers, interviewed after 6 weeks postpartum, tend to remember their labor and delivery experiences in such a way as to minimize the negative events that transpired. It is not known when this memory distortion occurs, or how this phenomenon may have affected the results indicated in other studies.

## POSSIBLE PSYCHOLOGICAL MECHANISMS OPERATING IN LAMAZE PREPARATION

In addition to the explicit components of the training described previously, there remain several, more implicit, factors which may affect the type of delivery a woman experiences. Such factors include social comparison, the effects of commitment and conformity, and perceived control. Each of these factors and their possible relationship to Lamaze training shall be discussed briefly.

### Social Comparison

In 1954, Festinger published his theory of social comparison processes. Although the theory is stated as a series of hypotheses, derivations, and corollaries, the fundamental premise is that people have a drive to evaluate themselves and, in the absence of objective nonsocial criteria, will evaluate their opinions and abilities by comparing themselves with others and, in particular, others who are similar on important dimensions. Schachter (1959) reported a number of confirming studies concerning the role of social comparison and an individual's desire to affiliate with others. His results indicated that, if a person is in a high-anxiety situation, simply waiting in the same room with others in the same or similar situation reduces the level of reported anxiety.

A number of studies support the finding that being with others who share the same situation reduces the amount of anxiety, fear, and discomfort perceived by the individual (Gerard & Rabbie, 1961; Singer, Baum, Baum, & Thew, 1979; Wrightsman, 1960). Although the effects of

social comparison have not been examined with regard to a psychoprophylactic delivery, Lamaze classes include several couples, and there is ample opportunity for individuals to benefit from the knowledge that they are not alone in their experience. Parents may compare progress with others, and the structured attention of a Lamaze instructor allows them the chance to clarify fears and misconceptions they might otherwise feel reluctant to express to their attending physician. The instructor is also available for greater lengths of time than the physician.

Data suggest that social comparison may reduce the amount of distress experienced by the individual (Singer, 1980). Lamaze preparation allows the opportunity for such comparison. However, there are no data to support the notion that such access and affiliation affect the later delivery performance. It is possible that group training may reduce the anxiety of pregnancy and, as a result, make the gestational period a more positive experience, but there is no evidence to support the idea that the effects of social comparison during pregnancy carry over to parturition.

## Commitment and Conformity

The finding that a public expression of beliefs and judgements is more binding than private expression has been supported in a number of studies (Argyle, 1972; Asch, 1956; Kelley & Volkart, 1952). Similarly, the idea that prior commitment is highly resistant to subsequent influences is also well documented (Freedman & Steinbruner, 1964; Hovland, Campbell, & Brock, 1957). Commitment has been shown to be affected by the degree to which a person feels it would be difficult to reverse or undo behavior (Brehm & Cohen, 1962; Kiesler,

1971).

The act of enrolling in a psychoprophylactic training course is a public expression of the belief in the effectiveness of the training to meet the needs of the participants. For six to eight weeks of training, couples study the components of the training and devote considerable time to the endogenous alleviation of pain. It would seem that a type of commitment is made to both the individual and to the group that may affect the later parturition experience.

Although the effects of commitment and conformity in situations other than childbirth are well documented (Argyle, 1972; Asch, 1956; Brehm & Cohen, 1962; Freedman & Steinbrunner, 1964; Kelley & Volkart, 1952; Hovland et al., 1957; Kiesler, 1969; Schachter, 1951), there are no data concerning psychoprophylactic training. It is not known whether participants feel that a commitment to the training is made or what effects such a commitment may have on an individual's later delivery experience.

## Perceived Control

Proponents of Lamaze (psychoprophylactic) preparation have stated that a major benefit of the training is that the mother is able to maintain control over her mind and body and emphasis on this control is stressed throughout the program (Ewy & Ewy, 1976).

The positive effects of perceived control are well documented in the psychological literature (see Cohen, 1980). Decharms (1968) has suggested that feelings of competence and increased self-esteem are derived from the perception of having control over an event. In addition, attitudes concerning and performance within a situation may

be affected by the amount of control individuals perceive themselves as having. In an attempt to simulate the effects of urban stress, Glass and Singer (1972) exposed subjects to loud noise bursts. Among the factors examined in this investigation were the effects of noise on task performance.

Results indicated that if the subjects believed the noise bursts were uncontrollable, they reported that the noise was highly irritating, did poorly on proofreading tasks, and gave up more easily on problem solving. However, those subjects who were led to believe that they could terminate the noise if they so desired exhibited none of these deficits. The authors found that simply telling human subjects about controllability had the same effect as actual controllability and resulted in decreased reporting of unpleasant or negative perceptions. Therefore, Glass and Singer suggested that the perception of behavioral control is effective in reducing the stress of noxious situations. A number of studies have replicated the results found by Glass and Singer (see Cohen, 1980).

In sum, the effects of perceived control have yielded postive results in a great number of situations (Cohen, 1980). However, there are no data concerning perceived or actual behavioral control and child delivery. It is unknown whether Lamaze training achieves its goal and fosters a sense of personal control in its participants.

## POSSIBLE PSYCHOLOGICAL EFFECTS OF THWARTED EXPECTATIONS

It is unknown whether women elect Lamaze preparation because they believe the training will alleviate the pain of labor and delivery or whether such a belief stems from some aspect of the regimen. However, in light of the fact that a significant number of women who elect psychoprophylactic training receive anesthesia (Wideman & Singer, 1984), it is likely that for some women the use of drugs is unexpected. Whether a prepared women will respond to this unexpected pharmacologic intervention with guilt, anxiety, or despair as reported by Stewart (1982) or in some other manner, cannot be predicted. Anecdotally, some people report that one consequence of thwarted expectations for delivery is anger (Melzack, 1984). Unfortunately, there exists no data to explain the mechanism by which such a response is elicited.

A great deal of research has been conducted on the psychological ramifications of thwarted expectations in areas other than childbirth (Baum, Aiello, & Davis, 1979; Beck, 1976; Brehm, 1966, 1972; Brehm & Cole, 1966; Brehm & Mann, 1975; Brehm, Stires, Sensenig, & Shaban, 1966; Glass & Singer, 1972; Hammock & Brehm, 1966; Melges & Bowlby, 1969; Overmier & Seligman, 1967; Rizley, 1978; Seligman & Groves, 1970; Seligman, Maier, & Geer, 1968: Seligman, Rosellini, & Kozak, 1975; Seligman, 1974, 1975; ). The results of these studies are described briefly below.

### Reactance Theory

There exist instances where a person believes that he or she

has control, but the situation becomes uncontrollable. According to Brehm (1966,1972), when a behavior option is eliminated or control over a particular behavior is threatened, individuals will experience a motivational arousal state called reactance. The amount of reactance experienced is a direct function of a) the expectation that control exists, b) the strength of the threat to this control, c) the importance of the control threatened to the individual, and d) the implications of the threat on the perception of control in other areas.

There are many ways in which individuals may come to believe that they are free to behave in a certain way. They may have behaved this way in the past, seen others exercise this freedom, been told by those in authority that they possess the option to behave in a certain manner, or may be guaranteed this right by law (Wortman & Brehm, 1975). In general, the more certain an individual is that he or she possesses a particular behavioral freedom, the more psychological reactance will be experienced if this freedom is threatened or eliminated. Alternatively, should a person feel that behavioral freedom is not possible (e.g., the option for control was never available), reactance should not be experienced when exposed to outcomes beyond control (Wortman & Brehm, 1975).

A number of studies have investigated the effects of expectations for control in situations whose outcomes were beyond an individual's control (Brehm & Cole, 1966; Brehm & Mann, 1975; Brehm, Stires, Sensenig, & Shaban, 1966; Hammock & Brehm, 1966). Results of these investigations suggest that individuals will react differently to uncontrollable outcomes depending upon whether they initially expect to have freedom of choice. In addition to a change in the

attractiveness of the uncontrollable outcome, subjects may attempt to engage in the restricted behavior, to express hostile or aggressive feelings toward the agent seen to be responsible for the loss of control, or to restore control by implication (e.g., altering the facts of an event in such a way as to represent an outcome consonant with expectations).

Although it is likely that the memory distortion reported by Standley and Nicholson (1980) reflects an attempt to restore control by implication, there exist no data concerning the extent to which prepared women respond to the nonfulfillment of their delivery expectations with reactance.

## Learned Helplessness

Studies with both animals and humans suggest that reactance may be only one aspect of the effects of thwarting an expectancy for control. Seligman and his associates (Overmier & Seligman, 1967; Seligman & Groves, 1970; Seligman, Maier, & Geer, 1968; Seligman, Rosellini, & Kozak, 1975) have used the term "learned helplessness" to describe the interference with adaptive responding that results from learning that one's responses and reinforcements are independent.

In most of Seligman's studies (1974,1975), animals were placed in a shuttlebox after exposure to one of three conditions: controllable shocks, uncontrollable shocks, or no pretreatment. Animals were then exposed to aversive stimulations that could be avoided by jumping from one side of the shuttlebox to the other. Those animals who were in either the controllable shock or no pretreatment conditions successfully learned to avoid the aversive stimulation within a few trials. However, those animals who had been

pretreated with uncontrollable shocks tended to give up on any attempts to avoid the stimulation and seemed to passively accept subsequent shocks at any intensity (Seligman, 1974). In addition, those animals that discovered the contingency between jumping into the other compartment and avoiding the shock generally failed to benefit from the experience. Rather than exhibiting avoidance behavior on subsequent trials, the animals tended to revert to simply accepting the stimulation.

In light of results such as these, Seligman suggested that the aversive stimulation, of itself, was not responsible for later interference with learning. Rather, the lack of control over the aversive stimulation was believed to be responsible for the interference.

Studies conducted with humans supported this hypothesis. Subjects who received uncontrollable shocks performed significantly worse on post-shock performance measures than those subjects who believed they had control over the shock and rated themselves as more helpless, incompetent and weak (Glass & Singer, 1972). Whether learned helplessness in humans is generalizable to situations other than the ones evaluated is not clear. Results from studies designed to test this relationship are equivocable. However, repeated exposure to uncontrollable situations does appear to be related to decreased task performance, depression, disease, heightened sensitivity to symptoms, interference with consulting of physicians, and even death (Baum, Aiello, & Davis, 1979; Seligman, 1975; Beck, 1976; Melges & Bowlby, 1969; Rizley, 1978).

Because both reactance and helplessness appear to result from exposure to uncontrollable outcomes, Wortman and Brehm (1975)

suggested an integrative model for the two theories that has received empirical support (Baum, Aiello, & Calesnick, 1978; Pittman & Pittman, 1979; Roth & Kubal, 1975). The authors proposed that the initial exposure to uncontrollable outcomes will arouse reactance as long as the individual expects to be able to control the outcomes. However, with repeated exposure to uncontrollable outcomes, the expectations for control decrease and the attempts to regain control fade. At this point, helplessness is likely to occur.

The relationship between reactance or helplessness and psychoprophylactic preparation has not been examined. There exists no data from which to predict whether a prepared woman will respond to thwarted expectations for delivery with either attempts to regain control or a passive acceptance of its loss.

## Attributions for Loss of Control

Weiner and his associates (Weiner, 1974; Weiner, Frieze, Kukla, Reed, Rest, & Rosenbaum, 1971) have done extensive work in investigating the role of causal attributions in mediating some of the aspects of reactance and helplessness. Their results suggest that individuals who are faced with an unexpected uncontrollable outcome may conclude that their own personal inadequacies are responsible for the outcomes experienced. Alternatively, a person may conclude that the inability to control a situation stems from external factors (e.g., characteristics of the situation or task rather than his or her approach to it).

According to Miller and Ross (1975), individuals are motivated to avoid self attributions that reflect negatively on their self esteem. Therefore, it might be anticipated that those who attribute

the uncontrollability of the outcomes experienced to their own inadequacies will react more intensely than those individuals who attribute the outcomes to external factors. However, Frieze (1976) suggests that the effects of either internal or external attributions are mediated by their perceived stability. In other words, if an attribution is thought to be stable, the individual may expect to experience similar outcomes in the future. Alternatively, if the source of the attribution is felt to be unstable (e.g., "If I had tried harder, things would have been different"), individuals may anticipate a different outcome in the future. Therefore, whether an individual responds with reactance or helplessness, may be affected by the stability of the attributions made to explain the outcome.

## Conclusions

There are no data concerning the extent to which Lamaze-prepared women become either reactant or helpless when confronted with a delivery outcome that does not match their expectations. Similarly, the attributions made by the participants as to the cause of the discrepancy, or their relative stability, is not known.

Women may expect different things from psychoprophylactic training. The extent to which any of these women feel satisfied with the training would seem to depend upon how their expectations for labor and delivery are met during parturition. Some women may plan to utilize the training as a means of avoiding the use of pharmacologic intervention during labor and delivery. These women would seem to expect to proceed through childbirth using only the techniques learned to alleviate discomfort. Others may wish only to decrease the amount of medication utilized. These women would seem to intend to use the techniques of the training, but plan to accept or request analgesia as desired. Some women may elect Lamaze training in an effort to involve both themselves and their husbands more directly with the parturition process while others may enroll simply because their physicians or friends recommended it.

It seems that careful study of the preparation should be undertaken to investigate the actual expectations of the women who enroll in Lamaze preparation programs and the effects of both the fulfillment and nonfulfillment of these expectations.

Although some women who expect to proceed with a Lamaze delivery actually do so, informal surveys show that a number of prepared women are given medication (Wideman & Singer, 1983). Such factors as size of the baby and unforeseen obstetrical complications may result in pharmacologic intervention regardless of how well prepared a woman is (Melzack, 1984, Stewart, 1982). Those instances in which medication was necessary should yield interesting patterns of response. For example, women may attribute the intervention to the

ineffectiveness of the method. These women would be expected to feel negatively toward the training, discourage its use to friends and relatives, and have no intention of using the method for future deliveries. Alternatively, the mother may attribute the use or need of anesthetic agents to the performance of her attending medical staff. These women would be expected to feel positively toward the method, but to feel negatively toward the medical personnel who assisted at her delivery. It is anticipated that these women will recommend the training to friends and relatives and plan to utilize it for future births, but not intend to utilize the same medical assistants.

Those women who attribute the cause of the intervention to their own inadequacies are expected to feel both positively and negatively toward the training (i.e., others may be able to use the techniques effectively, but they cannot). It would be expected that these women will recommend the training to friends and relatives, but not necessarily plan to utilize it for future births. All of the women in this group would be expected to desire high levels of social support and to exhibit more postpartum complaints than those women who attributed their use of medication to other factors.

As stated, women may elect psychoprophylactic training in an effort to proceed through labor and delivery without pharmacologic assistance. Those women who actually do proceed without the use of drugs would be expected to view the method favorably, recommend its use to friends and relatives, expect to use this form of preparation in the future, and to feel positively toward their birth experience and the father of their child.

## OBJECTIVES FOR A LAMAZE DELIVERY

Many childbirth educators teach their students that the techniques of psychoprophylactic preparation are sufficient for coping with the pain of labor and delivery. Alternatively, many instructors suggest that the use of analgesia or anesthesia if desired is acceptable. Women may elect to enroll in Lamaze preparation classes with different delivery goals in mind.

Some women may elect psychoprophylactic training in an effort to reduce, but not necessarily replace, the amounts and kinds of medications administered during labor and delivery. These women may intend to utilize the techniques of the training, but to accept or request analgesia whould labor become too uncomfortable. In the event that anesthetics are administered, the women in this group are expected to still feel positively toward the preparation, the delivery experience and the father, and to intend to both utilize the training in the future and recommend its use to others.

Should a woman who expects to accept or request analgesia complete the parturition process without the addition of medication, she is expected to look favorably upon psychoprophylactic preparation, recommend its use to others, intend to utilize the techniques for future births, and feel positively toward her husband. However, because the delivery expectations were not met, women in this group are not expected to view their overall childbirth experience as positively as those women who expected and received medication.

Women are expected to view their experience, the training, and their husband favorably if the mother is satisfied with the father's delivery performance. Those instances in which the mother is not

satisfied should lead to negative or critical feelings in the mother and this negativity is expected to affect marital satisfaction during the postpartum period.

# CHAPTER TWO

## GOALS AND HYPOTHESES

This study had the following goals:

1. Identification of a population of women currently enrolled in Lamaze preparation classes who express differing goals for labor and delivery. In other words, identification of those women who expect to utilize psychoprophylactic techniques alone for delivery management as well as those women who expect to augment Lamaze techniques with drugs if necessary. This was accomplished by a questionnaire-interview administered prenatally, but after the completion of Lamaze training, which assessed each subject's attitudes and expectations concerning psychoprophylactic training, childbirth, her birth attendants, and her husband, and preference for future delivery mode. A median split was performed on the responses to questionnaire items designed to assess expectations to use medication during labor and delivery (see Appendix D). Those women whose scores fell within the high range on these items were classified as "expect medication," while those women whose scores fell into the low range were classified as "expect no medication."

2. Evaluation of the extent to which a woman's pre-delivery expectations were realized during parturition. This evaluation

consisted of an examination of the kinds of medical interventions actually received during labor and delivery. Those women who reported that they received any medication were classified as "received medication," while those women who reported that they received no medication were classified as "received no medication."

3. Assessment of the extent to which a woman perceived that her delivery expectations were met and the effects of these perceptions. This was accomplished by means of a questionnaire-interview administered approximately two weeks postpartum which assessed the woman's current evaluations of herself, her husband, and her preferences for future delivery modes.

## HYPOTHESES

Based upon this classification of subjects, there were four possible conditions: 1) women who expected to receive no medication and received none, 2) women who expected to receive no medication, but received medication, 3) women who expected to receive medication, but received none, and 4) women who expected to receive medication, and received medication.

I. It was expected that the women in groups 1 and 4 would differ with regard to evaluation of their childbirth experience from those women in groups 2 and 3.

Rationale: Because the women in groups 1 and 4 experienced a parturition that was consonant with their expectations, it was anticipated that they would rate their overall childbirth experience more positively than those women whose expectancies were not realized.

Evaluation: This hypothesis was evaluated by means of a comparison of the group mean scores on the item "My overall childbirth experience was..." which ranged from "1-very positive" to "7-very negative".

II. It was expected that groups 1, 3, and 4 would not differ with regard to satisfaction with Lamaze preparation, but that the women in

these groups would differ significantly in responding from the women in group 2.

Rationale: Since the women in group 2 had their expectancies violated, they were expected to view Lamaze preparation as being less effective as a means of reducing discomfort and to be less inclined to use the preparation for future births or to recommend its use to others than women in other conditions. Although the women in group 3 did not experience the type of delivery they expected, they were able to cope with the discomforts of parturition using Lamaze techniques alone. Therefore, like the women in groups 1 and 4 whose expectations were met, these women were also expected to report a belief in the efficacy of Lamaze preparation, and the intent to both utilize and recommend the training.

Evaluation: This hypothesis was evaluated by means of a comparison of group mean agreements with the statements "I believe Lamaze preparation is an effective means of reducing the discomforts of labor and delivery," "I will recommend Lamaze preparation to my friends and relatives," and "I will use Lamaze preparation for all my future deliveries." ("1-strongly agree" to "7-strongly disagree")

III. For those women in group 2, it was expected that a significant negative relationship would be found between attribution to Lamaze

preparation and those items that assessed satisfaction with Lamaze.

Rationale: Because the women in this group expected the techniques of Lamaze preparation to be sufficient to cope effectively with the pain of labor and delivery, and this expectancy was violated, these women were expected to be less likely to utilize the training in the future, recommend its use to others, or to believe in its efficacy if they attributed their use of medication to some aspect of the training than if they attributed this result to other factors.

Evaluation: This notion was tested by means of comparing the degree to which the women in this condition who attributed the outcomes of their deliveries to Lamaze agreed with the statements "I feel Lamaze preparation is an effective means of reducing the discomforts of labor and delivery," "I will recommend Lamaze preparation to my friends and relatives," and "I will use Lamaze preparation for all of my future deliveries" with the degree of agreement reported by women in this condition who attributed their delivery outcome to other factors.

IV. It was expected that the women in group 2 would report a significant relationship between attribution to the self for delivery outcome and scores on the Social Support Scale and the SCL90.

Rationale: Because attributions of negative outcomes to the self may threaten self-esteem,

those women in group 2 who attributed the violation of their expectancies to their own inability to adequately perform and maintain the Lamaze regimen were expected to desire higher levels of social support than those women who attributed their unexpected use of medication to external factors. In addition, these women were also expected to report more postpartum complaints than those women in the other attribution groups.

Evaluation: Hypothesis IV was tested by means of examining the relationship between attribution and reported desire for social support, as well as the relationship between attribution and the number of symptoms reported in the postpartum period.

V. It was anticipated that a significant negative relationship would be found between attribution to the obstetrician for delivery outcome and intent to utilize the same obstetrician for future obstetrical needs for the women in Group 2.

Rationale: The women in this group were expected to feel that they could have experienced the delivery they had planned for if their obstetrician had not intervened. Therefore, the women in this condition were expected to report that they were unlikely to utilize the same obstetrician for subsequent deliveries.

Evaluation: This hypothesis was tested by means of comparing the responses of women who attributed their use of medication to their physicians on the item, "I will consult the same obstetrician who assisted with my delivery for all my future obstetrical needs to the responses of those women who attributed their delivery outcomes to other factors.

VI. The extent to which the mother was satisfied with the father's performance during labor and delivery was expected to be significantly related to marital satisfaction in the postpartum period.

Rationale: If the mother reported dissatisfaction with her husband's performance during her labor and delivery, this dissatisfaction was expected to negatively affect marital satisfaction in the post-partum period.

Evaluation: Hypothesis VI was evaluated by means of examining the relationship between subject responses to the item, "How satisfied were you with your husband's participation during your labor and delivery?" and the extent of reported satisfaction with the marriage.

VII. Those women who expected a drug-free delivery, but who received an unscheduled Caesarean section were expected to be more satisfied

with Lamaze preparation than those women who expected medication and delivered surgically.

Rationale: Although the women who expected no medication did not realize the delivery they expected, the violation of expectancy was through no fault of either their own or the method's. Physiological factors precluded the implementation of Lamaze techniques, but the regimen may still be considered to be effective. However, those women who expected to receive medication, did not expect Lamaze techniques alone to reduce the discomforts of labor and delivery. Therefore, the fact that their deliveries required not only chemical, but also surgical intervention was expected to result in decreased reporting of a belief in Lamaze efficacy, as well as a lesser intention to recommend or to utilize the training for future deliveries.

Evaluation: Hypothesis VII was tested by means of a comparison of the mean responses to the items, "I feel Lamaze preparation is an effective means of reducing the discomforts of labor and delivery," "I will recommend Lamaze preparation to my friends and relatives," and "I will use Lamaze preparation for all my future deliveries" between those women who expected no medication but delivered surgically and those women who expected medication and received a Caesarean section.

# CHAPTER THREE

## METHOD

### Subjects

One of the goals of the present study was to identify a population of women who were enrolled in Lamaze preparation classes who had differing expectations with regard to medication use during labor and delivery. Permission was received from the Board of Directors of 2 of the largest psychoprophylactic preparation programs in the Washington, D.C. metropolitan area (American Society for Psychoprophylaxis in Obstetrics and Parent and Child, Incorporated) to approach their instructors regarding the participation of their students in a doctoral research project. A total of 12 instructors agreed to allow recruitment during their classes. Educators were recruited until an appropriate sample size for the investigation was reached. All of the instructors contacted agreed to participate. It was decided to approach students during the fifth class session because, at that point, both the techniques of Lamaze training and an overview of analgesic and anesthetic agents available for labor and delivery had been presented.

Letters requesting participation in a research project were distributed by the individual childbirth preparation instructors to each of the women enrolled in her class who expected to deliver within the designated time period (Appendix A). All of the women indicated

that they would like to participate and were asked to sign a form stating their consent to participate in a research project (Appendix B). All subjects were fully informed about the research and were told that they may withdraw from the study at any time without penalty. Of the original sample of 109 volunteers, 40 women were multiparous. Because it was believed that women who have previously experienced pregnancy and/or labor and delivery carry with them a set of attitudes and expectations that may affect their perceptions of subsequent child delivery experiences in a way that differs from a primipara, these women were excluded from the analyses. Of the remaining 69 volunteers, 9 were scheduled to deliver by means of a Caesarean section. Because it was believed that women prepare for a surgical delivery differently from those who prepare for a nonsurgical delivery, these women were also excluded from the analyses. Two of the remaining primiparas did not provide sufficient information to be included in the analyses. All subjects excluded from the analyses were asked to complete a brief demographics questionnaire for comparison with those women in the target sample. None of the women received any compensation for their participation in the investigation.

## Procedures

Those primiparous women who agreed to participate were asked to complete a series of questionnaires designed to assess their views on psychoprophylactic preparation, their upcoming delivery, their physician, future plans for child delivery, themselves, their husbands, and their reasons for such attitudes. Permission was

obtained from the individual class instructors to attend the fifth class session. Packets containing Appendices C and D were given to the target subjects with the request that they complete the forms as soon as possible and return them at the end of the class session. Those women who expected to deliver surgically or who had previously been pregnant were also given packets containing Appendices C and D with the request that they complete and return the forms by the end of the class session. Every student in every class completed and returned this packet of questionnaires.

In an effort to avoid the effects of memory distortion reported by Standley and Nicholson (1980) with a minimal 6 week hiatus, each subject was contacted by phone at approximately two weeks after the reported due date and asked whether she had yet delivered her child. Those women who had not delivered were noted and were called at one-week intervals until parturition had taken place. When a woman reported that she had delivered, an additional series of questionnaires (Appendices E-I) designed to assess current views on psychoprophylactic preparation, the physician, the husband, herself, labor and delivery, future plans for child delivery, and the reasons for such attitudes were sent to the home address with the request that the subject complete the forms as soon as possible and return them in the envelope provided.

## Prenatal Measures

Demographics. This is a 10-item checklist designed to collect information about subject characteristics. Items included age, marital status, educational level, ethnic origin, religion, family

income level, length of residence in the Washington, D.C. metropolitan area, area of residence, whether subjects lived in an urban, suburban, or rural area, and information about medical insurance coverage.

Expectations for Delivery. This is an 18-item checklist designed to assess subject expectations for her impending labor and delivery. The checklist was divided into 3 subsections: 1) Expectations for Medication. Subjects were asked to indicate which of the following items they expected to receive during labor and delivery: a) mild sedative, b) general anesthesia, c) spinal anesthesia; 2) Expectations for Intervention. Subjects were asked to indicate which of the following they expected to receive during labor and delivery: a) local anesthesia for episiotomy and repair, b) internal fetal monitoring, c) external fetal monitoring, d) drugs to speed up labor, e) intravenous fluids, f) forceps or suction extraction, g) participation of a coach, or h) Caesarean section; 3) Expectations for Husband Participation. Subjects were asked to indicate which of the following activities they would like their husbands to perform during labor and delivery: a) time the contractions, b) massage sore areas, c) hold my hand, d) remind me to relax, e) breathe with me during contractions, f) bring me ice chips, or g) encourage me.

Importance of Medication. This measure consisted of a seven-point bipolar scale used to assess the extent to which it was important to subjects not to receive medication during parturition.

Importance of Husband Participation. This measure consisted of a seven-point bipolar scale used to assess the extent to which the mother desired her husband's active participation during labor and delivery.

## Postpartum Measures

Perceptions of Instructor/Classmates Attitudes. This measure consisted of a series of multiple choice questions designed to assess subject perceptions of instructor and classmate attitudes concerning the use of medication during labor and delivery.

Satisfaction with Lamaze. This measure consisted of a series of seven-point bipolar scales used to assess subject satisfaction with psychoprophylactic preparation, and included: 1) extent to which subject would recommend Lamaze training to friends and relatives, 2) extent to which subject would utilize the training for future births, 3) perceived effectiveness of the training for the subject's own delivery.

Attributions for Delivery Outcome. This measure consisted of a series of seven-point bipolar scales designed to assess the subject's perceptions for the causes of her delivery outcomes and included: 1) extent to which subject felt she was responsible for the outcomes of her delivery, 2) extent to which subject felt the method was responsible for the outcomes of her delivery, 3) extent to which subject felt some aspect of the obstetrical procedure was responsible for the delivery outcome, 4) extent to which subject felt the attending physician was responsible for the delivery outcome.

Satisfaction With Obstetrician. This seven-point bipolar item was used to assess the extent to which the subject would consult the same obstetrician in the future.

Satisfaction With Overall Delivery Experience. This measure

consisted of a seven-point bipolar scale designed to assess subject attitude toward her overall delivery experience.

Satisfaction with Husband Participation. This measure consisted of a seven-point bipolar scale designed to assess the extent to which the subject was satisfied with her husband's participation during her labor and delivery.

Perceptions of Pain During Parturition. This measure consisted of 2 seven-point bipolar scales designed to assess subject perceptions of pain during labor and delivery.

The Social Support Scale. This scale consists of Likert-type items and was designed to assess perceived levels of social support (Fleming, Baum, Gisriel, & Gatchel, 1982). The scale consists of six subscales, but because this investigation was interested in desire for social support, only the scale assessing judged importance of social support was included in the analyses.

The Symptom Checklist (SCL90). This is a 90-item self-report inventory designed to measure the current psychological symptom profile of psychiatric and medical patients (Derogatis, Rickels, & Rock, 1976). The SCL90 contains 10 subscales, nine which identify particular kinds of symptoms reported, and an "Positive Symptom Total." Because this investigation was interested in the number of postpartum complaints, only the Positive Symptom Total was included in the analyses.

The Locke-Wallace Marital Assessment Survey. This is a 15-item scale that has been well validated as a measure of marital satisfaction (Locke & Wallace, 1959; Murstein & Beck, 1972).

# CHAPTER FOUR

# RESULTS

## SUBJECT CHARACTERISTICS

A total of 58 subjects participated in the study. Of these, 29 expected to deliver using Lamaze preparation techniques alone to alleviate the discomforts of labor and delivery and 29 expected to augment these techcniques with medication. None of the women who were contacted in the training sessions refused to participate. However, a chi-square comparison with those who were excluded from the analyses indicated that there were no demographic differences between those women who were and those women who were not included. However, as stated previously, there were differences due to parity. All of the women included in the analyses were primiparas. Multiparas were excluded from the investigation. In addition, those women included in the study anticipated spontaneous vaginal deliveries while those women who expected to deliver surgically were excluded.

(insert Table 1 about here)

Similarly, a series of chi-square comparisons between those subjects who expected and who did not expect anesthesia indicated that there were no demographic differences between expectancy groups.

(insert Table 2 about here)

## CLASSIFICATION OF SUBJECTS INTO GROUPS

### Medication Expectations

At the time of recruitment, within 6 weeks of child delivery, each volunteer was asked to complete a questionnaire designed to assess her expectations regarding medication use during child delivery. Subjects were asked to indicate how likely they were to receive each of the following: sedative, general anesthesia, spinal anesthesia, local anesthesia for episiotomy repair, internal fetal monitoring, external fetal monitoring, pitocin, intravenous fluids, forceps or suction extraction, assistance from a coach, and a Caesarean section. The possible responses ranged from "1-not at all likely" to "4-definitely". In addition, women were asked to indicate how important it was to them not to receive medication during childbirth. A Birth Index score designed to reflect a mother's expectations for exogenous pain relief during parturition was computed from the responses to these items. Those women who indicated that it was "1-not at all likely" or "2-moderately possible" that they would receive a sedative, general anesthesia, or spinal anesthesia and who had indicated that it was very important to them not to receive medication during labor and delivery (e.g., those who scored 3 or less on the item, "How important is it to you that you receive no medication during labor and delivery" where the range went from "1-very important" to "7-not at all important") were given a Birth Index score of "0-expects no medication". Those women who indicated that it was either "3-highly probable" or "4-definitely" that they would receive any of these agents and who stated that a labor and delivery devoid of pharmacologic assistance was not very important to

them (e.g., those who scored 4 or greater on this item) were given a Birth Index score of "1-expects medication". Because the remaining items (e.g., local anesthesia for episiotomy repair, internal fetal monitoring, etc.) were not considered to have a chemical effect on pain reduction, they were not included in the computation of the Birth Index score. Of the final sample of 58 women, 29 were assessed as "0-expects no medication" and 29 were assessed as "1-expects medication."

Medication Received

Within two weeks postpartum, women in the target sample completed a series of questionnaires which assessed the clinical events that transpired during parturition, the subject's attitude toward Lamaze preparation, herself, her obstetrician, her labor and delivery, her overall childbirth experience, her husband, and her attributions for the outcomes of her delivery. Also included in the questionnaires were instruments designed to assess some psychological ramifications of delivery outcomes. All postpartum measures were returned within two weeks of mailing.

Those women who indicated they had received a se ve, general anesthesia, or spinal anesthesia during labor or delivery were considered to have received medication. Those women who indicated that they had not received any of these agents were considered to have received no medication (with the exception of episiotomy repair).

Medication Expected/Medication Received

A crosstabulation was performed between expectations for medication (Birth Index score) and medication received to determine

which expectations were met. Table 3 reflects the results of this analysis.

(insert Table 3 about here)

Of the 29 women who expected no medication, only 5 actually proceeded through labor and delivery without pharmacologic assistance. Of the remaining 24 who received medication, five women delivered via an unscheduled Caesarean section.

Of the 29 prepared women who expected medication, 4 delivered without analgesia or anesthesia, and 7 delivered surgically.

In other words, of the 58 women included in the analysis, 23 women (40%) experienced a delivery consonant with their expectations, and 35 women (60%) experienced a type of delivery they did not expect.

A total of 12 women (21%) delivered by means of an unscheduled Caesarean section, 5 (9%) were from the expect no medication group and 7 (12%) were from the expect medication group.

A total of 9 women (15%) went through delivery without anesthesia, 5 (9%) in the expect no medication group and 4 (6%) in the expect medication group.

A total of 37 women (63%) delivered vaginally with anesthesia, 19 (32%) in the expect no medication group and 18 (31%) in the expect medication group.

Perceptions of Instructor/Classmates Attitudes

A crosstabulation was performed between subject perceptions of both her instructor's and her classmates' attitudes concerning the use of medication during child delivery and between these perceptions and

the subjects' expectations for medication to assess the extent to which these expectations were affected by members of the training group.

(insert Table 4 about here)

Perceived attitudes of instructors and perceived attitudes of classmates were divided into three categories: a) medication is unnecessary for coping with the discomforts of labor and delivery, b) medication may be necessary, and c) medication is definitely necessary for dealing with pain during parturition. For 56 of the 58 subjects, there was perfect agreement on the ratings of each source; the 2 who differed were one step apart. Therefore, ratings of the instructors' attitudes and the classmates' attitudes are considered to be exactly equivalent.

As can be seen in Table 4, 23 (79%) of the women who expected no medication believed that both their instructors and their classmates felt that medication was not necessary during parturition and 6 (21%) believed that their classmates and teachers felt that medication may be necessary. Of the 29 women who expected medication, 24 (83%) believed that their classmates and instructors felt that medication may be necessary for coping with the discomforts of labor and delivery and 5 (17%) believed that others felt that medication was definitely necessary.

In an effort to determine whether the women in each condition entered her psychoprophylactic training with a preconceived attitude concerning the need for medication during labor and delivery or if expectations for medication were a result of group influences, a crosstabulation was performed between expectation for medication and

individual class.

(insert Table 5 about here)

As Table 5 illustrates, the distribution of women who expected no medication and who expected to receive medication were evenly distributed among the individual Lamaze classes. These results suggest that a woman's expectation for medication is not influenced by her perceptions of the attitudes held by either her instructor or classmates. Rather, a woman's perception of her Lamaze group's attitude appears to be influenced by her expectations for medication.

## INTERCORRELATIONS BETWEEN MEASURES

### Items Designed to Assess Satisfaction With Lamaze

Responses to three items were used to assess satisfaction with Lamaze preparation: a) belief in the efficacy of the preparation as a means of reducing the discomforts of labor and delivery, b) intent to recommend the training to friends and relatives, and c) intent to utilize the training for future deliveries. As can be seen from Table 6, each of these measures were significantly related.

(insert Table 6 about here)

### Attribution Variables

In contrast to those items designed to assess satisfaction with the training, the attribution variables (self, Lamaze, obstetrician, obstetrical procedures) were not significantly related

indicating that the attributional categories were perceived as discrete, independent items by the participants. The intercorrelations of the attribution variables are presented in Table 6.

## HYPOTHESES

### Hypothesis I

Hypothesis I postulated that those women whose expectations for delivery were met (expect no medication, received no medication - Group1; expect medication, received medication - Group4) would regard their overall childbirth experience as being more positive than those women whose expectations for delivery were not met (expect no medication, received medication - Group2; expect no medication, received Caesarean section; expect medication, received none - Group3; expect medication, received Caesarean section) and was tested by means of a 2 x 3 analysis of variance (ANOVA) to investigate the effects of both the fulfillment and nonfulfillment of delivery expectations on the evaluation of the overall childbirth experience. The first, 2-level, factor was expectation for medication (expect no medication, expect medication), and the 3-level factor was medications received (received no medication, received medication, received Caesarean section). As Table 7 indicates, the results of the analysis supported this hypothesis.

(insert Table 7 about here)

Although all of the scores were positive, a significant

interaction effect was found. A post hoc comparison of the group means indicated that those women whose expectations for delivery were met rated their overall childbirth experience more positively than those women whose expectations were not met (Vaginal births only: $t(44)=1.94$; $.10>p>.05$; All births: $t(56)=2.475$; $.02>p>.01$) No significant main effects were found.

Hypothesis II

Hypothesis II suggested that those women whose delivery expectations were not realized would be less likely to believe in the efficacy of Lamaze training as a means of reducing labor and delivery discomfort than those women whose expectations were met. This hypothesis was tested by means of a series of two-way ANOVAs (with the same factors as Hypothesis I) which investigated the effects of the fulfillment and nonfulfillment of delivery expectations on the perceived effectiveness of psychoprophylactic training, the intention to recommend the training to others, and the intention to utilize Lamaze preparation for future births. As Table 8 indicates, this aspect of Hypothesis II was not supported.

(insert Table 8 about here)

Although all of the scores were in the positive range, no effect was found for the interaction term indicating that there were no significant differences with regard to belief in Lamaze efficacy between conditions. However, a significant main effect was found for medication expectation. This effect indicated that those women who expected to utilize psychoprophylactic techniques alone to cope with labor and delivery discomfort reported a greater belief in the

effectiveness of the training than those women who expected to accept or request analgesia.

Hypothesis II also postulated that those women whose expectations for delivery were met would be more likely to recommend psychoprophylactic training to their friends and relatives than those women whose expectancies were violated. Again, although all the scores were positive, no significant effect was found for the interaction term suggesting that intent to recommend Lamaze did not differ across conditions.

(insert Table 9 about here)

Although intention to recommend the training remains likely, no significant effects were found.

In addition, it was theorized that the intent to utilize Lamaze techniques for future births would be more likely if a woman experienced a delivery consonant with her expectations. As Table 10 indicates, no significant effects were found, suggesting that intention to utilize the training does not vary across conditions.

(insert Table 10 about here)

Hypothesis III

Hypothesis III postulated that a significant negative relationship would be found between attribution to Lamaze and belief in the efficacy of the training, intent to recommend the preparation to others, and intent to utilize the method for future deliveries for those women who expected no medication, but received it. This hypothesis was tested by means of a Pearson correlation analysis

performed on the responses of the women in Group 2 which investigated the relationship between attribution for delivery outcome and these variables. A Fisher's z-test was performed to compare the relationship between attribution to Lamaze and these items with the relationships between attributions to the self, the obstetrician, and the obstetrical procedures and belief in the efficacy of the regimen, the intention to recommend the training, and the intention to utilize the training in the future. As Tables 11-13 indicate, the results of the analysis did not support the hypothesis.

(insert Tables 11-13 about here)

For those women who expected to rely on the techniques alone, but who received medication (Group2), a significant positive relationship was found between attribution to Lamaze and belief in its efficacy ($r=.51$, $p<.05$), intent to recommend the training ($r=.41$, $p<.05$), and intent to utilize the techniques for future births ($r=.47$, $p<.05$). Similarly, a significant positive correlation was found between attribution to Lamaze and these variables for those women in Group 4 who expectations were not met ($r=.68$, $p<.05$; $r=.70$, $p<.05$; $r=.65$, $p<.05$, respectively). These results suggest that attribution to Lamaze did not diminish satisfaction with the training regardless of delivery outcome. Although significant relationships were found between these variables and attribution to Lamaze in other conditions, a Fisher's z-test performed between correlations determined that there were no significant differences between groups.

In addition, as Tables 11-13 indicate, attribution to the self appears to be related to those items designed to assess satisfaction with psychoprophylactic preparation. Those women in Group 2 whose

expectations were not met reported a belief in the efficacy of the training and an intention to both recommend and utilize the training in the future if they attributed the outcomes of their delivery to their own actions. A test of the coefficients between conditions using a Fisher's z-test indicated that there were no significant differences between conditions.

Hypothesis IV

It was anticipated that a significant relationship would be found between attribution to the self and both desires for social support and scores on the subscale of the SCL90 for those women in Group 2. This hypothesis was tested by means of a series of Pearson correlation analyses performed on the responses of the women in Group 2 and scores on the Social Support Scale and the SCL90. Tables 14 and 15 reflect the results of these analyses.

(insert Table 14 about here)

As Table 14 indicates, a significant relationship was found between attribution to the self and importance of social support for those women who expected no medication but received some (Group 2).

It was expected that those women in Group 2 would report higher scores on the SCL90 if they attributed their delivery outcome to their own actions than if they attributed their use of medication to external factors.

(insert Table 15 about here)

As Table 15 indicated, a significant correlation was found between attribution to the self and score on the SCL90 for those women who expected no medication but received anesthesia.

Hypothesis V

It was anticipated that a significant negative correlation would be found between attribution to the obstetrician and intent to utilize the same obstetrician for future obstetrical needs for those women who expected no medication, but received analgesia or anesthesia. To test Hypothesis V, a Pearson correlation analysis was performed on the responses of the women in Group 2 to investigate the relationship between these variables. As Table 16 indicates, this hypothesis was not supported.

(insert Table 16 about here)

A significant positive correlation was found between attribution to the physician and intent to utilize the same obstetrician in the future ($r=.83$, $p<.05$). In addition, a Fisher's z-test of the coefficients indicated that those women in this condition who attributed their use of medication to their obstetrician were significantly more likely to utilize the same health professional than those women who attributed their outcomes to themselves or to Lamaze preparation ($p=.02$ and $p=.04$, respectively).

Although the correlations between these variables for those women who both expected and received medication (Group 4) and who expected medication and delivered surgically were not significant, the coefficients for these conditions suggest a negative relationship between attribution to the physician and intent to utilize the same

obstetrician for future obstetrical needs.

Hypothesis VI

Hypothesis VI predicted a positive the relationship between satisfaction with the husband's performance dur[illegible] labor and delivery and marital satisfaction in the postpartum period. It was anticipated that those women who were dissatisfied with the level of participation would report lower scores on the Locke-Wallace Marital Assessment Survey than those women who reported satisfaction with their spouse. This hypothesis was also tested by means of a Pearson correlation analysis.

A significant relationship was found between these variables ($r=.57$; $p<.001$). This relationship indicates that husband participation during parturition is related to marital satisfaction in the postpartum period.

Hypothesis VII

Hypothesis VII postulated that those women who expected no medication, but received a Caesarean section would be more likely to express satisfaction with Lamaze than those women who expected medication and delivered surgically. Hypothesis VII was tested by means of a series of t-tests designed to assess the relationship between an unexpected surgical delivery and belief in the efficacy of Lamaze training, intent to recommend the preparation, and intent to utilize the preparation for future deliveries.

No significant differences were found between conditions with respect to belief in the efficacy of the preparation ($t(10)=1.66$; $p=0.129$). In addition, there was no significant difference between

groups for intent to recommend the training ($t(10)=2.22$; $p=0.06$). Those women who expected no medication were no more likely to recommend the training to friends and relatives than women who did expect medication. Similarly, no significant differences were found with regard to intent to utilize the method for future deliveries ($t(10)=0.676$; $p=0.514$).

## ALTERNATIVE HYPOTHESES

### Importance

Because the results of these analyses may have been affected by the degree to which the realization of medication expectancies was important to the women included in the investigation, an examination of the relationship between expectancy and importance was performed. As Table 17 indicates, the distribution of women into expectancy condition (expects no medication, expects medication) was not affected by the importance of the expectancy. In other words, scores on the item "How important is it to you NOT to receive medication during labor and delivery" could have been deleted from the computation of the Birth Index score, and the results of the investigation and the analyses would not differ from those presented here.

(insert Table 17 about here)

### Perceived Pain

It may be suggested that perceived pain of labor and delivery may have affected both the outcomes of delivery and subject responses on the postpartum questionnaires. Therefore, perceptions of pain

during labor and during delivery were evaluated for each condition.

(insert Tables 18 - 19 about here)

As Tables 18 and 19 indicated, there were no significant differences with regard to perceptions of discomfort during parturition between conditions. However, the results of this analysis should be interpreted cautiously. It is unknown at which point women were referring when they made their assessments.

# CHAPTER FIVE

## DISCUSSION

One of the goals of the present study was to identify a population of women who differed with regard to the realization of medication expectations for labor and delivery. As Table 2 showed, there were significant differences between groups as defined by the Birth Index score with regard to delivery outcome. Although the design of this investigation did not originally include a separate examination of the groups that received a Caesarean section, the scores among these women seemed to warrant attention in the analyses.

The non-realization of labor and delivery expectations yields interesting results. Those women who received medication they didn't anticipate and who did not receive the medication they expected were significantly less satisfied with their overall childbirth experience than those women who experienced a delivery similar to their expectations. However, attitudes toward Lamaze preparation appear to be unscathed. Regardless of delivery outcome, there were no significant differences between conditions on those items designed to assess satisfaction with the training. All of the women appeared to be equally likely to believe in the efficacy of the training as a means of reducing the discomforts of labor and delivery, to intend to recommend the training to friends and relatives, and to intend to utilize the techniques of the preparation for future deliveries. A

significant main effect was found which indicated that those women who expected to rely on psychoprophylactic techniques alone were more likely to believe in the efficacy of the training than those women who planned to augment the preparation with analgesia or anesthesia. This finding suggests that a self-selection bias may have affected the distribution of women into expectancy groups. However, because women could not self-select into outcome conditions, this bias was not felt to have affected the results of the analyses.

It was anticipated that those women whose delivery expectations were met would feel positively toward Lamaze preparation. However, those women whose expectations were not met were also satisfied with the training.

Those women who believed that they had a choice for their delivery outcome and then experienced a parturition that was beyond their control may have become reactant. According to reactance theory (Wortman & Brehm, 1975), the attractiveness of the uncontrollable outcome may be enhanced by those women who thought they would have control. Those Lamaze-prepared women whose delivery experience was contrary to their expectations may look upon the training more favorably simply because their desires for parturition were not met.

Reactance theory also suggests that individuals may express anger or hostile feelings toward the agent seen as responsible for the loss of control. Therefore, it was expected that those women who attributed the outcomes of their delivery to the Lamaze preparation techniques would report less satisfaction with the training than those women who attributed their delivery outcomes to other factors. Hypothesis III postulated that those women who expected no medication but received it would be less likely to consider psychoprophylactic

preparation to be effective, less likely to recommend its use to friends and relatives, and less likely to intend to utilize the techniques for future deliveries if they attributed their use of medication to some aspect of the regimen than if they attributed the outcome to other variables. However, as Table 10 indicated, no significant differences were found between attributional groups for the women in this condition and attribution to Lamaze was positively correlated with those items assessing satisfaction with the training. In addition, an evaluation of the relationship between attribution to Lamaze and satisfaction with the preparation in the other five conditions yielded similar results. Attribution to psychoprophylactic preparation does not appear to result in decreased satisfaction with the regimen regardless of delivery expectation or outcomes.

These results suggest that those women who undergo Lamaze preparation experience a feeling of commitment to the regimen that is resistant to change. Such a finding is not without precedence in the psychological literature (Freedman & Steinbrunner, 1964; Hovland, Campbell, & Brock, 1957). Deutsch and Gerard (1955) reported that if an individual makes a commitment by expressing his or her beliefs publicly, it is more likely that the individual will act consistently with those opinions than if they had been made privately. The act of proceeding through a psychoprophylactic training regimen and then attempting to utilize the techniques during labor and delivery is a public expression of a belief in the effectiveness of the training as a means of achieving the outcomes desired by the participants which would seem to insure positive feelings about the preparation regardless of whether expectations were met.

However, such a commitment was not expected to generalize to

the attending physician. It was anticipated that those women who unexpectedly received medication would be less likely to utilize the same obstetrician for future obstetrical needs if the professional was seen to be responsible for the delivery outcome. As Table 15 indicated, those women who expected no medication and received it were significantly more likely to intend to utilize the same obstetrician than if they attributed their delivery outcome to either their own actions or to the preparation techniques. One explanation for this finding is that the women in this group experienced discomfort to the extent that they were grateful to their physicians for absolving them of their commitment to a drug-free delivery. Although no significant differences were found between groups on those measures designed to assess perceived pain of labor and delivery, Melzack (1984) reports that parturition is a painful process regardless of whether psychoprophylactic techniques are implemented. It is possible that the subjects in this condition experienced not only a chemical reduction of their labor discomfort, but, because they attributed their use of medication to their obstetricians, were also able to resolve the conflict at having prepared for a drug-free delivery and accepted medication. These women reported an intention to utilize the preparation for future births. Although the study did not assess whether these women also intended to accept or request analgesia in the future, it would seem that desire to utilize the same obstetrician may be a means of reserving the option for medication should it be desired.

Literature in areas other than childbirth suggests that if individuals take action to avoid a certain outcome and then experience that outcome anyway, they will attribute the cause to either

themselves or to external factors (Weiner, 1974). Should the individual attribute the cause to him or herself, this attribution may result in helplessness with heightened needs for social support and increased reporting of somatic complaints (Janoff-Bulman & Frieze, 1983; Weiner, 1974).

It was postulated that those women who expected no medication and received chemical assistance would express a greater desire for social support and higher scores on the SCL90 if they attributed their use of medication to their own actions than if they attributed this outcome to external factors. The results of the analyses supported this hypothesis.

As Table 13 indicates, those women in Group 2, whose expectancies for medication were not met, reported a significant relationship between attribution to the self and importance of social support. However, the women in Group 4 whose expectations were realized reported a negative relationship between these variables.

The pattern of correlations between attribution to the self and scores on the SCL90 for Groups 2 and 4 are similar to those between attribution to the self and importance of social support. Research suggests that causal attributions to the self for adverse outcomes results in increased somatic complaints (Janoff-Bulman & Frieze, 1983). Those women who attributed their unexpected use of medication to their own actions (women in Group 2) reported higher symptom scores than those women who attributed their expected use of medication to themselves. This pattern of responding indicates that attribution to the self may result in helplessness in those women who plan to deliver without medication but receive anesthesia.

It was thought that those women who were dissatisfied with

their husband's participation during parturition would score in the low range on those items designed to assess marital satisfaction in the postpartum period. That a significant correlation was found between these variables suggests that the realization of delivery expectations may have an important impact on the interpersonal relationship of new parents.

# IMPLICATIONS

Although surveys suggested that a significant number of women who elect psychoprophylactic preparation receive medication during labor and delivery (Wideman & Singer, 1983), estimates as to what percent of a prepared population actually delivers without pharmacologic assistance, what percentage expects a drug-free delivery, or the psychosocial effects of both the realization and non-realization of the delivery expectations had not been documented. The present study examined these issues and suggested results which may be of interest to members of both the medical and psychological professions.

Of the 58 women included in the analyses, 29 or 50% expected to proceed with a psychoprophylactic delivery without the aid of analgesia or anesthesia. However, only 5 of these women (17.2%) actually experienced such a delivery. On the other hand, of those prepared women who expected to receive medication, 4 or 13.8% delivered without chemical assistance. Of the total sample then, only 15.5% of those women who had undergone Lamaze preparation proceeded through a labor and delivery that was not augmented with pharmacologic agents. Similarly, although none of the women in the target sample expected a Caesarean delivery, almost 21% received not only chemical, but also surgical assistance for child delivery. A review of the literature concerning Lamaze preparation suggests that the majority of those women who elect such training for childbirth are Caucasian, well-educated members of the upper-middle socio-economic strata

(Wideman & Singer, 1984). The subjects of the current study match these criteria. Therefore, while specific figures concerning the number of prepared women who expect a non-medicated delivery, proceed through parturition without drugs, or who deliver via an unscheduled Caesarean section are not available, estimates of these populations may now be possible.

Although totals may vary from class to class, based upon the results of this study it may be anticipated that approximately 15% of those women enrolled in Lamaze training will deliver without medication, and approximately 21% will have a Caesarean section. About 50% of the women will expect to receive medication, 50% will expect not to receive medication, and approximately 60% will not realize their expectations.

The fact that approximately 50% of the women who enroll in psychoprophylactic preparation expect to receive medication and less than 20% who expect to deliver without medication actually do so raises a number of questions concerning Lamaze training for child delivery. What are the effects, both positive and negative, of psychoprophylactic preparation? Why might women elect such preparation for child delivery? How is the idea that Lamaze preparation may result in a drug-free delivery perpetuated?

## The Effects of a Lamaze Delivery

The literature concerning psychoprophylactic preparation suggests that the regimen has a positive effect on maternal attitudes toward a number of factors related to the birth experience (Felton & Segelman, 1978; Scott & Rose, 1976; Tanzer & Block, 1976; Zax et al., 1975). Studies also suggest that the training is useful in anxiety

and pain reduction (Cogan et al., 1976; Davenport-Slack & Boylan, 1974; Stevens, 1976a, 1976b; Tanzer & Block, 1976). The results of this investigation partially supported these findings.

The analyses conducted on the responses of the women included in this investigation suggest that Lamaze preparation does have a significant positive effect on maternal attitudes, particularly maternal attitudes toward Lamaze preparation. Regardless of delivery outcome, Lamaze-prepared women reported a belief in the efficacy of the training as a means of reducing the discomforts of labor and delivery, and the intention to both recommend and utilize the training in the future. Similarly, attitudes toward the attending physician appear to benefit from psychoprophylactic training. Even if a woman experienced a delivery contrary to her expectations, she was likely to intend to utilize the same obstetrician for future obstetrical needs.

However, attitudes toward the marriage and the overall childbirth experience did not reflect this relationship. Psychoprophylactic preparation does appear to have a positive effect on marital satisfaction in the post-partum period. However, this relationship is in evidence only to the extent that the mother was satisfied with her husband's participation during her labor and delivery. If a woman reported satisfaction with her husband's participation during the childbirth process, she was likely to report a greater degree of marital satisfaction after delivery. However, should a woman feel dissatisfied with her spouse's involvement during parturition, marital satisfaction is likely to be negatively affected.

Although studies have reported that psychoprophylactic preparation has a positive effect on attitudes concerning the overall childbirth experience (Tanzer & Block, 1976), the results of this

investigation suggest that this satisfaction is contingent upon the extent to which expectations for delivery are met. Although those women who expected no medication and received none (Group1) and who both expected and received medication (Group4) reported satisfaction with their overall childbirth experience, they represented only about 40% of the population studied. A majority (60%) of the women included in this investigation experienced a delivery that was not in accordance with their expectations. These women were significantly less satisfied with their overall experience than those women whose expectations were met.

Although proponents of psychoprophylactic preparation have lauded the benefits of the training for over three decades, the results of this investigation suggest that the positive effects of Lamaze training for its participants may be significantly affected by the degree to which expectations for delivery are realized.

## Why Would a Woman Elect Lamaze Preparation?

At least half of the women who elect psychoprophylactic training appear to do so in an attempt to proceed through a labor and delivery without chemical assistance. However, the results of the analyses presented here suggest that the remaining 50% of the women who enroll in Lamaze classes intend to accept or request analgesia. Why a woman who anticipates a conventional delivery elects psychoprophylactic preparation is not known.

One explanation for this behavior is that the training has been recommended by the obstetrician or by friends or relatives. Similarly, a woman may simply desire to have her husband present

during parturition. In a number of hospitals throughout the United States, the father is allowed to accompany the mother into the labor and delivery areas only if he presents a certificate of completion from a childbirth preparation course. It is possible that some women who anticipate a medicated delivery enroll in psychoprophylactic preparation solely to ensure that their husbands are present during labor and delivery.

A woman may elect Lamaze training because she wishes to use her husband's performance during labor and delivery as a means of evaluating his devotion or dedication to herself or her child.

A major objective of Lamaze training is to remove the fear of the unknown by providing sensory and procedural information about gestation and birth (see Wideman & Singer, 1984). Women may elect psychoprophylactic training in an attempt to learn as much as possible about the transformation they are experiencing. Similarly, the information and breathing and relaxation exercises may be seen as a means of attaining a sense of personal control over the progress of parturition.

The extent to which any or all of these possibilities affect a woman's decision to enroll in Lamaze preparation classes is not known. However, it seems clear that although many women elect psychoprophylactic preparation as a means of avoiding chemical intervention during labor and delivery, a number of factors exist that may make the training desirable to those women who plan for a medicated parturition.

## How is the Idea That Lamaze Preparation May Result in a Drug-Free Delivery Perpetuated?

Although at least 50% of the women who enroll in Lamaze preparation classes do so in an attempt to deliver without analgesia or anesthesia, over 80% receive medication during parturition. In light of these statistics, it is unclear why psychoprophylactic techniques may be considered to be an alternative to chemical analgesia.

Reactance theory suggests that individuals may cope with the thwarting of their expectations by altering the facts of their experience to produce an outcome consonant with their expectations (Wortman & Brehm, 1975). Research exists that suggests that those women who anticipate a drug-free delivery, but who receive medication may indeed employ such a mechanism.

Standley and Nicholson (1980) monitored women as they proceeded through the parturition process and then interviewed them six weeks later to determine the accuracy of their recollections. Their results indicated that newly delivered women tend to minimize the negative aspects of their labors and deliveries.

Because the number of women in the present study who reported that they did not receive medication was so small, it was believed that these results, collected within two weeks of delivery, were not affected by this phenomenon. However, because memory distortion appears to occur as a function of time, it is possible that a follow-up evaluation of these same women would yield significantly different results. Women who originally reported that they received an unanticipated spinal anesthetic may state later that they received no medication. It is possible that those women who expected a drug-free delivery may report later that they had actually planned to receive anesthesia. However, because Lamaze preparation seems to

foster a sense of committment to the training in those women who elect it, it is anticipated that women would be more likely to modify their recollections in such a way as to match the "ideal" psychoprophylactic delivery.

Although women who elect Lamaze training may not realize a drug-free delivery, the results of this investigation should not be considered an indication that women do not benefit from the preparation. Indeed, a commitment to Lamaze may evolve because women felt that they gained something valuable from the regimen in spite of the fact that their expectations were not met. It is possible that psychoprophylactic preparation successfully removes the fear of the unknown and affords enough of a sense of control in those women who elect it to positively affect their attitudes toward the preparation regardless of delivery outcome.

This investigation did not intend to assess the viability of psychoprophylactic preparation as an alternative to chemical analgesia. Rather, the emphasis of this study was to assess the effects of the realization and non-realization of delivery expectations. For a majority of women in the target sample, expectations for delivery were not realized, and the thwarting of these expectations significantly affected satisfaction with the overall childbirth experience and with the marriage in the postpartum period.

Proponents of Lamaze preparation state that one of the goals of the training is to make childbirth a more positive experience (Ewy & Ewy, 1970). The analyses presented here suggest that, for a significant proportion of those women who elect this form of child delivery, this goal is not met.

The objective of pharmacologic anesthesia is the same as that of nonpharmacologic methods; to reduce the pain and discomfort of labor and delivery. The premise that psychoprophylactic preparation may replace chemical analgesia has been challenged. For a substantial subset of women, childbirth cannot be painless. Physiological factors result in discomfort regardless of whether preparation is implemented. Therefore, the use of medication takes on a different perspective. It is possible that fewer women would experience the effects of the nonrealization of delivery goals if Lamaze preparation is viewed as effective for some rather than effective for all.

To psychologists, the topic of psychoprophylactic preparation would seem to be a fertile area for future research. Not only is the training based upon a number of psychological principles for pain reduction, but Lamaze preparation appears to have a number of effects, both positive and negative, on those individuals who elect this form of child delivery.

The extent to which women enroll in Lamaze classes as a means of maintaining control over the types of interventions received is unknown. However, the results of this investigation suggest that avoiding pharmacologic intervention is important to at least half of the Lamaze-prepared population and these women expect the techniques of the training to enable them to deliver without medication. That almost 83% of these women expected to control their delivery discomfort themselves but experienced pain beyond their control suggests that the birth process is a convenient model for investigating the effects of thwarted expectations for control in health care settings.

The women included in this investigation appeared to become

reactant and, depending upon their attribution for delivery outcome, helpless when their expectations were not met. However, all of the women in the target sample were primiparous. How these women may differ in responding from a sample of multiparous women is not evident. Similarly, whether expectation realization or non-realization affects future child bearing activity or aspects of other health care procedures is unclear.

Results indicated that satisfaction with the husband's performance during parturition affects marital satisfaction in the postpartum period. Whether attitudes toward the child are also affected should be examined.

Psychologists have traditionally been concerned with cognitive development in the individual. In recent years, the scope of interest has expanded to include many other factors that may affect a person's development. The area of pregnancy and parturition presents a unique opportunity to investigate a number of psychological theories. Rarely does there exist a model that incorporates such areas as pain reduction, perceived control, reactance, helplessness, attribution theory, psychosocial interactions, cognitive control, social support, and the effects of committment that is also as available as women preparing to give birth. It seems likely that researchers should wish to take advantage of such an opportunity.

Literature concerning psychoprophylactic preparation suggests that Lamaze training has a positive effect on maternal attitudes toward a number of factors related to the birth experience and is effective in anxiety and pain reduction (see Wideman & Singer, 1984). However, the results of this investigation suggest that for those primiparas who elect this form of childbirth preparation, realization

of delivery expectancies is significantly related to general satisfaction and may affect interpersonal relationships in the postpartum period.

The Lamaze Method of preparation for childbirth is one of the most widely used forms of childbirth training available today (Wideman & Singer, 1983). However, a majority of those women who elect psychoprophylactic preparation experience a delivery quite different from what they anticipate. Further research is indicated to assess the long term effects of both the realization and nonrealization of delivery expectations on psychosocial interactions, future child bearing activity, and attitudes toward health care in this and other areas.

TABLE 1

DEMOGRAPHIC CHARACTERISTICS OF SUBJECTS

| | Included in the Study N=60 | Not Included in the Study N=51 |
|---|---|---|
| Parity | | |
| Primiparas (expect vaginal delivery) | 60 | 0 |
| Primiparas (expect Caesarean delivery) | 0 | 9 |
| Multiparas | 0 | 40 |
| Age (20-40) | $\bar{X}$=29 | $\bar{X}$=28 |
| Marital Status | | |
| Married | 54 | 45 |
| Not Married | 3 | 2 |
| Educational Level | | |
| Less than High School | 2 | 7 |
| High School | 13 | 10 |
| College | 42 | 25 |
| Graduate | 0 | 5 |
| Ethnic Origin | | |
| Caucasian | 41 | 28 |
| AfroAmerican | 9 | 7 |
| Other | 7 | 5 |
| Religion | | |
| Protestant | 21 | 18 |
| Catholic | 19 | 15 |
| Jewish | 9 | 6 |
| Other | 6 | 5 |
| Income Level | | |
| <$15,000/year | 5 | 0 |
| $15-25,000/year | 9 | 10 |
| $25,001-50,000/year | 24 | 21 |
| >$50,000/year | 16 | 8 |
| Years in Metro. Area | $\bar{X}$=16 | $\bar{X}$=15 |
| 0 - 10 | 4 | 2 |
| 11 - 15 | 13 | 12 |
| 16 - 20 | 22 | 22 |
| 21 - 30 | 12 | 16 |
| Urban | 13 | 12 |
| Suburban | 38 | 36 |
| Rural | 4 | 3 |

| | | |
|---|---|---|
| Prenatal Insurance | 56 | 51 |
| Delivery Insurance | 56 | 51 |

NOTE: In some instances, the total number of responses in each category may be less than the total number of subjects. This is due to missing data that was not provided by the subjects. Two of the primiparas who expected to deliver vaginally did not provide enough complete data to be included in the analyses.

TABLE 2

DEMOGRAPHIC CHARACTERISTICS OF EXPECTANCY GROUPS

| | Expect no Medication N=29 | Expect Medication N=29 |
|---|---|---|
| Parity | | |
| Primiparas (expect vaginal delivery) | 29 | 29 |
| Primiparas (expect Caesarean delivery) | 0 | 0 |
| Multiparas | 0 | 0 |
| Age (20-40) | $\bar{X}$=29 | $\bar{X}$=29 |
| Marital Status | | |
| Married | 27 | 27 |
| Not Married | 1 | 2 |
| Educational Level | | |
| Less than High School | 0 | 2 |
| High School | 6 | 7 |
| College | 22 | 20 |
| Graduate | 0 | 0 |
| Ethnic Origin | | |
| Caucasian | 21 | 20 |
| AfroAmerican | 6 | 3 |
| Other | 4 | 3 |
| Religion | | |
| Protestant | 10 | 11 |
| Catholic | 8 | 11 |
| Jewish | 5 | 4 |
| Other | 3 | 3 |
| Income Level | | |
| <$15,000/year | 3 | 2 |
| $15-25,000/year | 6 | 3 |
| $25,001-50,000/year | 13 | 11 |
| >$50,000/year | 8 | 8 |
| Years in Metro. Area | $\bar{X}$=16 | $\bar{X}$=16 |
| 0 - 10 | 2 | 2 |
| 11 - 15 | 7 | 6 |
| 16 - 20 | 12 | 10 |
| 21 - 30 | 5 | 7 |
| Urban | 6 | 7 |
| Suburban | 18 | 20 |
| Rural | 3 | 1 |

| | | |
|---|---|---|
| Prenatal Insurance | 29 | 27 |
| Delivery Insurance | 29 | 27 |

NOTE: In some instances, the total number of responses in each category may be less than the total number of subjects. This is due to missing data that was not provided by the subjects.

TABLE 3

MEDICATION EXPECTED BY MEDICATION RECEIVED

| | | Received No Medication | Received Medication | Received Caesarean Section | |
|---|---|---|---|---|---|
| Expect No Medication | (n) | 5 | 19 | 5 | (29) |
| | (%) | 8.6 | 32.7 | 8.6 | (50%) |
| Expect Medication | (n) | 4 | 18 | 7 | (29) |
| | (%) | 6.8 | 31.0 | 12.0 | (50%) |
| | | (9) | (37) | (12) | |
| | | (15.5%) | (63.8%) | (20.7%) | |

TABLE 4

PERCEIVED ATTITUDES OF INSTRUCTORS AND CLASSMATES

| | CLASSMATES | | |
|---|---|---|---|
| INSTRUCTOR | Medication Unnecessary | Medication May Be Necessary | Medication Necessary |
| Medication Unnecessary | 22 | 1 | 0 |
| Medication May Be Necessary | 0 | 29 | 1 |
| Medication Necessary | 0 | 0 | 5 |

EXPECTATION FOR MEDICATION WITH PERCEIVED ATTITUDE FOR MEDICATION

| | INSTRUCTOR AND CLASS ATTITUDES | | |
|---|---|---|---|
| | Medication Unnecessary | Medication May be Necessary | Medication Necessary |
| Expect No Medication | 23 | 6 | 0 |
| Expect Medication | 0 | 24 | 5 |

TABLE 5

DISTRIBUTION OF MEDICATION EXPECTANCY BY INDIVIDUAL CLASS

| Class Number | Expect No Medication (n=29) | Expect Medication (n=29) |
|---|---|---|
| 1 | 2 | 2 |
| 2 | 3 | 3 |
| 3 | 3 | 5 |
| 4 | 1 | 3 |
| 5 | 2 | 4 |
| 6 | 3 | 4 |
| 7 | 3 | 1 |
| 8 | 2 | 2 |
| 9 | 2 | 2 |
| 10 | 2 | 1 |
| 11 | 3 | 1 |
| 12 | 3 | 1 |

TABLE 6

INTERCORRELATIONS OF VARIABLES

SATISFACTION WITH LAMAZE

| | Intent to Recommend | Intent to Utilize |
|---|---|---|
| Efficacy of Training | .5462* | .6438* |
| Intent to Recommend | | .7732* |

ATTRIBUTIONS

| | Lamaze | Obstetrician | Obstetrical Procedures |
|---|---|---|---|
| Self | .0560 | -.0094 | .1728 |
| Lamaze | | .1485 | .1284 |
| Obstetrician | | | .2270 |

Scores ranged from "1-Agree Strongly" to "7-Disagree Strongly"

*=p<.05

TABLE 7

SATISFACTION WITH OVERALL CHILDBIRTH EXPERIENCE

CELL MEANS:

| | Received No Medication | Received Medication | Received Caesarean Section |
|---|---|---|---|
| Expect No Medication | 1.60 (5) | 2.58 (19) | 2.00 (5) |
| Expect Medication | 2.25 (4) | 1.83 (18) | 3.57 (7) |

CONDITION MEANS:

| Expect No Medication | Expect Medication | |
|---|---|---|
| 2.31 (29) | 2.31 (29) | |
| **Received No Medication** | **Received Medication** | **Received Caesarean Section** |
| 1.89 (9) | 2.22 (37) | 2.92 (12) |

ANALYSIS OF VARIANCE

| Source of Variation | Sum of Squares | DF | Mean Square | F | Significance of F |
|---|---|---|---|---|---|
| Expect | 0.052 | 1 | 0.052 | 0.030 | 0.864 |
| Received | 6.390 | 2 | 3.195 | 1.830 | 0.171 |
| Interaction Expect by Received | 13.228 | 2 | 6.614 | 3.788 | 0.029* |
| Error | 90.795 | 52 | 1.746 | | |

Range: "1=very satisfied"; "7=very dissatisfied"

*=p<.05

TABLE 8

BELIEF IN LAMAZE EFFICACY

CELL MEANS:

| | Received No Medication | Received Medication | Received Caesarean Section |
|---|---|---|---|
| Expect No Medication | 2.00 (5) | 1.58 (19) | 2.00 (5) |
| Expect Medication | 3.25 (4) | 2.22 (18) | 3.43 (7) |

CONDITION MEANS:

| Expect No Medication | Expect Medication |
|---|---|
| 1.71 (29) | 2.66 (29) |

| Received No Medication | Received Medication | Received Caesarean Section |
|---|---|---|
| 2.63 (9) | 1.89 (37) | 2.83 (12) |

| Source of Variation | Sum of Squares | DF | Mean Square | F | Significance of F |
|---|---|---|---|---|---|
| Expect | 11.234 | 1 | 11.234 | 10.570 | 0.002* |
| Received | 8.391 | 2 | 4.196 | 3.947 | 0.125 |
| Interaction Expect by Received | 1.668 | 2 | 0.834 | 0.785 | 0.462 |
| Error | 54.207 | 52 | 1.063 | | |

Range: "1-strongly agree"; "7=strongly disagree"

*=p<.05

TABLE 9
INTENT TO RECOMMEND LAMAZE

CELL MEANS:

| | Received No Medication | Received Medication | Received Caesarean Section |
|---|---|---|---|
| Expect No Medication | 1.40 (5) | 1.53 (19) | 1.40 (5) |
| Expect Medication | 1.75 (4) | 2.17 (18) | 2.29 (7) |

CONDITION MEANS:

| Expect No Medication | Expect Medication |
|---|---|
| 1.50 (29) | 2.14 (29) |

| Received No Medication | Received Medication | Received Caesarean Section |
|---|---|---|
| 1.63 (9) | 1.84 (37) | 1.92 (12) |

ANALYSIS OF VARIANCE:

| Source of Variation | Sum of Squares | DF | Mean Square | F | Significance of F |
|---|---|---|---|---|---|
| Expect | 0.008 | 1 | 0.008 | 0.006 | 0.937 |
| Received | 0.616 | 2 | 0.308 | 0.247 | 0.782 |
| Interaction Expect by Received | 3.129 | 2 | 1.564 | 1.255 | 0.294 |
| Error | 64.807 | 52 | 1.246 | | |

Range: "1-strongly agree"; "7-strongly disagree"

TABLE 10

INTENT TO UTILIZE LAMAZE

CELL MEANS:

| | Received No Medication | Received Medication | Received Caesarean Section |
|---|---|---|---|
| Expect No Medication | 2.00 (5) | 1.58 (19) | 2.00 (5) |
| Expect Medication | 2.25 (4) | 1.94 (18) | 2.43 (7) |

CONDITION MEANS:

| Expect No Medication | Expect Medication |
|---|---|
| 1.61 (29) | 2.10 (29) |

| Received No Medication | Received Medication | Received Caesarean Section |
|---|---|---|
| 1.75 (9) | 1.76 (37) | 2.25 (12) |

ANALYSIS OF VARIANCE:

| Source of Variation | Sum of Squares | DF | Mean Square | F | Significance of F |
|---|---|---|---|---|---|
| Expect | 3.103 | 1 | 3.103 | 2.235 | 0.141 |
| Received | 1.910 | 2 | 0.955 | 0.688 | 0.507 |
| Interaction Expect by Received | 0.688 | 2 | 0.334 | 0.241 | 0.787 |
| Error | 70.790 | 52 | 1.388 | | |

Range: "1-agree strongly"; "7-disagree strongly"

TABLE 11

CORRELATIONS OF BELIEF IN THE EFFICACY OF LAMAZE WITH ATTRIBUTION

| Attribution | Condition | | | | | | |
|---|---|---|---|---|---|---|---|
| | Group1 (5) | Group2 (19) | Group3 (4) | Group4 (18) | Group5 (5) | Group6 (7) | Total (58) |
| Self | .1336 | .5490* | .9272* | .4455* | .8946* | .5570 | -.0225 |
| Lamaze | .8709* | .5107* | .6207 | .6776* | .6207 | .7180 | .2729* |
| Obstetrician | .6676 | .2800 | -.4857 | .3008 | .6262 | .7294* | -.0106 |
| Obstetrical Procedures | .1817 | .3095 | -.9272 | .4287* | .1566 | .6843* | -.2296* |

NOTE: Group1=Expect no medication,received none; Group2=Expect no medication received medication; Group3=Expect medication, received none; Group4=Expect medication, received medication; Group5=Expect No Medication, Received Caesarean Section; Group6=Expect Medication, Received Caesarean Section

* = $p<.05$

Scores Ranged from "1-Agree Strongly" to "7-Disagree Strongly"

A positive correlation indicates that the more women attributed their delivery outcome to a particular agent, the more they believed in the efficacy of the training; a negative correlation indicates that the more women attributed their delivery outcome to a particular agent, the less they believed in the efficacy of the training.

TABLE 12

CORRELATIONS OF INTENT TO RECOMMEND LAMAZE WITH ATTRIBUTION

| Attribution | Condition | | | | | | |
|---|---|---|---|---|---|---|---|
| | Group1 (5) | Group2 (19) | Group3 (4) | Group4 (18) | Group5 (5) | Group6 (7) | Total (58) |
| Self | .6124 | .4362* | .8704* | .2802 | .0364 | .6740* | .0160 |
| Lamaze | .4901 | .4133* | .4362 | .7008* | .4362 | .1708 | .1002 |
| Obstetrician | .0987 | .4280* | -.9864* | .1684 | -.4901 | .1473 | -.0222 |
| Obstetrical Procedures | .4362 | .2125 | -.8704* | .3313 | -.4901 | -.2298 | -.0915 |

NOTE: Group1=Expect no medication, received none; Group2=Expect no medication, received medication; Group3=Expect medication received none; Group4=Expect medication received medication; Group5=Expect no medication, received Caesarean Section; Group6=Expect medication, received Caesarean Section

* = $p<.05$

Scores ranged from "1-agree strongly" to "7-Disagree Strongly"

A positive correlation indicates that the more women attributed their delivery outcome to a particular agent, the more they intended to recommend the training; a negative correlation indicates that the more women attributed their delivery outcome to a particular agent, the less they intended to recommend the training.

TABLE 13

CORRELATIONS OF INTENT TO UTILIZE LAMAZE WITH ATTRIBUTION

| Attribution | Condition | | | | | | |
|---|---|---|---|---|---|---|---|
| | Group1 (5) | Group2 (19) | Group3 (4) | Group4 (18) | Group5 (5) | Group6 (7) | Total (58) |
| Self | 1.0000* | .4447* | .9685* | .2059 | .8946* | .7831* | .2156* |
| Lamaze | .5145 | .4654* | .6207 | .6482* | .6207 | .2646 | .2239* |
| Obstetrician | -.4432 | .3807* | -.9098* | .0945 | .6262 | .2510 | -.0794 |
| Obstetrical Procedures | -.3400 | .2338 | -.9685* | .2014 | .1566 | -.1891 | -.3665* |

NOTE:Group1=Expect no medication, received none; Group2=Expect no medication, received medication; Group3=Expect medication, received none; Group4=Expect medication, received medication; Group5=Expect no medication, received Caesarean Section; Group6=Expect medication, received Caesarean Section

* = $p<.05$

Scores ranged from "1-Agree Strongly" to "7-Disagree Strongly"

A positive correlation indicates that the more women attributed their delivery outcome to a particular agent, the more they intended to utilize the training; a negative correlation indicates that the more women attributed their delivery outcome to a particular agent, the less they intended to utilize the training.

TABLE 14

CORRELATIONS OF DESIRE FOR SOCIAL SUPPORT WITH ATTRIBUTION

| Attribution | Condition | | | | | | |
|---|---|---|---|---|---|---|---|
| | Group1 (5) | Group2 (19) | Group3 (4) | Group4 (18) | Group5 (5) | Group6 (7) | Total (58) |
| Self | -.4536 | .3511 | .5817 | -.4670* | .5817 | .2022 | .0527 |
| Lamaze | .3001 | .2882 | -.0755 | -.3029 | .8600* | .0833 | -.2633* |
| Obstetrician | .7823* | .1617 | -.9083* | -.4379* | .5188 | -.5745 | .1841 |
| Obstetrical Procedures | .5706 | .2416 | -.5817 | -.2945 | .5125 | -.5741 | .0093 |

NOTE: Group1=Expect no medication, received none; Group2=Expect no medication, received medication; Group3=Expect medication, received none; Group4=Expect medication, received medication; Group5=Expect no medication, received Caesarean Section; Group6=Expect medication, received Caesarean Section

* = $p < .05$

A positive correlation indicates that the more women attributed their delivery outcome to a particular agent, the higher their score on the Social Support Scale; a negative correlation indicates that the more women attributed their delivery outcome to a particular agent, the lower their scores on the Social Support Scale.

TABLE 15

CORRELATIONS OF SCL90 SCORE WITH ATTRIBUTION

| Attribution | Condition | | | | | | |
|---|---|---|---|---|---|---|---|
| | Group1 (5) | Group2 (19) | Group3 (4) | Group4 (19) | Group5 (5) | Group6 (7) | Total (58) |
| Self | -.9037* | .6091* | -.8412 | -.8412* | .3514 | -.5967 | -.0895 |
| Lamaze | -.5597 | .6559* | -.5774 | .6419* | .0775 | -.4482 | -.2179* |
| Obstetrician | .2001 | .3213 | .9941* | .2615 | .0684 | -.4527 | .0711 |
| Obstetrical Procedures | -.0417 | .2691 | .8412 | .4106 | .0026 | -.1767 | .2342* |

NOTE: Group1=Expect no medication, received none; Group2=Expect no medication, received medication; Group3=Expect medication, received none; Group4=Expect medication, received medication;Group5=Expect no medication, received Caesarean Section; Group6=Expect medication, received Caesarean Section

* = $p<.05$

A positive correlation indicates that the more women attributed their delivery outcome to a particular agent, the higher their scores on the SCL90; a negative correlation indicates that the more women attributed their delivery outcome to a particular agent, the lower their scores on the SCL90.

TABLE 16

CORRELATIONS OF INTENT TO UTILIZE SAME OBSTETRICIAN WITH ATTRIBUTION

| Attribution | Condition | | | | | | |
|---|---|---|---|---|---|---|---|
| | Group1 (5) | Group2 (19) | Group3 (4) | Group4 (19) | Group5 (5) | Group6 (7) | Total (58) |
| Self | -.5976 | .4518* | 1.0000* | .5838* | .4001 | -.3914 | .0397 |
| Lamaze | .3075 | .5367 | .9272* | .3282 | .2379 | .8143 | -.1963* |
| Obstetrician | .9150* | .8358* | .9102* | -.1491 | .9102* | -.1171 | .1732 |
| Obstetrical Procedures | .6385 | .2490 | -1.0000* | -.0140 | .9102* | -.3767 | -.0304 |

NOTE: Group1=Expect no medication, received none; Group2=Expect no medication, received medication; Group3=Expect medication, received none; Group4=Expect medication, received medication; Group5=Expect no medication, received Caesarean Section; Group6=Expect medication, received Caesarean Section

* = $p < .05$

Scores ranged from "1-Strongly Agree" to "7-Strongly Disagree"

A positive correlation indicates that the more women attributed their delivery outcome to a particular agent, the more they intended to utilize the same obstetrician; a negative correlation indicates that the more women attributed their delivery outcome to a particular agent, the less they intended to utilize the same obstetrician.

TABLE 17
DISTRIBUTION OF RESPONSES THAT COMPRISED BIRTH INDEX SCORE
(Women Included in Study)

"How important is it to you NOT to receive medication during labor or delivery?" 1 2 3 4 5 6 7
very important — not at all important

"How likely is it that you will receive each of the following: a) sedative, b) general anesthesia, c) spinal anesthesia"
1-not at all likely
2-moderately possible
3-highly probable
4-definitely

| | How important no medication: 1-3 | 4-7 |
|---|---|---|
| How likely: | | |
| sedative (1-2) | 29 | 3 |
| general (1-2) | 29 | 0 |
| spinal (1-2) | 28 | 0 |
| sedative (3-4) | 0 | 13 |
| general (3-4) | 0 | 2 |
| spinal (3-4) | 0 | 29 |

| | Importance 1-3 | 4-7 |
|---|---|---|
| all anesthesia 1-2 | 29 | 0# |
| all anesthesia 3-4 | 0 | 29 |

#NOTE: None of the women in this group expected a sedative alone without a general or a spinal.

TABLE 18
PERCEIVED LABOR DISCOMFORT

| | Received No Medication | Received Medication | Received Caesarean Section |
|---|---|---|---|
| CELL MEANS: | | | |
| Expect No Medication | 4.00 (5) | 3.42 (19) | 2.60 (5) |
| Expect Medication | 4.75 (4) | 4.17 (18) | 2.86 (7) |

CONDITION MEANS:

| Expect No Medication | Expect Medication |
|---|---|
| 3.38 (29) | 3.93 (29) |

| Received No Medication | Received Medication | Received Caesarean Section |
|---|---|---|
| 4.33 (9) | 3.78 (37) | 2.75 (12) |

ANALYSIS OF VARIANCE:

| Source of Variation | Sum of Squares | DF | Mean Square | F | Significance of F |
|---|---|---|---|---|---|
| Expect | 6.025 | 1 | 6.025 | 1.822 | 0.183 |
| Received | 16.194 | 2 | 8.097 | 2.449 | 0.096 |
| Interaction Expect by Received | 0.557 | 2 | 0.278 | 0.084 | 0.919 |
| Error | 171.938 | 52 | 3.307 | | |

Scores ranged from "1-Very Painful" to "7-Not at all Painful"

TABLE 19

PERCEIVED DELIVERY DISCOMFORT

CELL MEANS:

| | Received No Medication | Received Medication | Received Caesarean Section |
|---|---|---|---|
| Expect No Medication | 4.60 (5) | 5.11 (19) | 5.60 (5) |
| Expect Medication | 5.25 (4) | 4.56 (18) | 3.14 (7) |

CONDITION MEANS:

| Expect No Medication | Expect Medication |
|---|---|
| 5.10 (29) | 4.31 (29) |

| Received No Medication | Received Medication | Received Caesarean Section |
|---|---|---|
| 4.89 (9) | 4.84 (37) | 3.14 (12) |

ANALYSIS OF VARIANCE:

| Source of Variation | Sum of Squares | DF | Mean Square | F | Significance of F |
|---|---|---|---|---|---|
| Expect | 8.115 | 1 | 8.115 | 2.026 | 0.161 |
| Received | 3.429 | 2 | 1.714 | 0.428 | 0.654 |
| Interaction Expect by Received | 13.226 | 2 | 6.613 | 1.651 | 0.202 |
| Error | 208.241 | 52 | 4.005 | | |

Scores ranged from "1-Very Painful" to "7-Not at all Painful"

APPENDIX A

Dear Lamaze Student,

I am a researcher with the Department of Medical Psychology of the Uniformed Services University of the Health Sciences in Bethesda, Maryland. My research concerns factors associated with Lamaze (psychoprophylactic) preparation for childbirth, and I am asking for your help.

There is little known about the overall effectiveness of such preparation programs as Lamaze training. Although it appears that many women elect this technique for the delivery of their children, why, how, or, even, if it is effective as a means of reducing labor discomfort has not been documented. A number of questions remain concerning the expectations and outcomes of a Lamaze delivery. With your help, I would like to answer some of these questions.

Participation in this project will require an hour or two of your time. I am asking women who are enrolled in Lamaze preparation classes to complete a series of brief questionnaires, respond to a short interview in their own homes, and to give their doctor permission to allow me to examine their labor and delivery records. I am interested in your perceptions of your delivery experience, your attitudes concerning Lamaze preparation, and such factors as length of labor, types of drugs administered, whether or not fetal monitoring was used, and duration of stay in the hospital.

Your participation is entirely voluntary. Your medical care and attention is in no way contingent upon your participation. Should you decide to participate, your responses will remain strictly confidential and all data will be reported as group data with no individual identification. In no way will it be possible for your responses to be traced back to you.

Should you decide to participate, please sign, date, and return the consent form included with this letter and return it in the envelope provided. This form will grant permission to your doctor to allow me to view your medical records from which I will note the clinical events that transpired during your labor and delivery. For example, I will be looking at such factors as length of labor, amounts and types of drugs administered, type of fetal monitoring used, whether membranes ruptured spontaneously, Apgar score of the infant, time spent in the recovery area, and duration of stay in the hospital. Later, you may be contacted and asked to complete the questionnaire phase of the study.

Even if you do not wish to participate, please complete the enclosed questionnaires and return them in the envelope provided. This information will enable me to compare those women who do choose to participate with those women who don't just to make sure that they are similar in age, marital status, education, and the like. Your responses on this questionnaire will remain anonymous and no one will contact you further. In fact, I do not even know who you are. This letter has been distributed by the instructor of your childbirth preparation class.

Thank you for the time and attention you have taken with this letter and the accompanying forms. Please remember, if you would like to participate, please sign and return the consent form. If you would not like to participate, although I hope that you will, please complete and return the enclosed questionnaires anonymously. I would appreciate your responding as soon as possible regardless of whether you do or do not wish

to be included in this investigation.

I look forward to hearing from you soon. Again, thank you for your assistance with my research.

Sincerely,

Margaret v. Wideman
Department of Medical Psychology

# CONSENT FORM FOR PARTICIPATION IN AN INVESTIGATION

You are invited to participate in a study of the expectations and outcomes associated with Lamaze preparation for child delivery. We need to interview people who have used this form of prenatal preparation for the delivery of their children. Therefore, we are asking women who enrolled in Lamaze classes to answer a number of questions and to allow us to inspect their labor and delivery records. We are asking that you help us by participating. Participation in this study will require an hour or two of your time. Data will be used to help understand what outcomes are associated with this form of delivery technique.

We will ask you to complete a series of brief questionnaires. These questionnaires will ask you about your upcoming delivery experience, your attitudes concerning health care, some general background information, and a variety of questions designed to learn more about your beliefs and some of your personal characteristics.

Your participation in this study is entirely voluntary and all data collected will be kept strictly confidential. The only copies of the data collected will remain in a research file in the Uniformed Services University of the Health Sciences' Department of Medical Psychology. Data will not be presented or published in any manner that will reveal your identity. A copy of this report will be sent to you if you request it.

If you decide to participate, you may withdraw or discontinue participation at any time for any reason without prejudice. Your obstetrical care and attention is in no way contingent upon your participation in this investigation. If you have any questions, we expect you to ask us.

This study does not entail any physical or mental risk. You will not directly benefit from this study. However, your responses will help us to learn more about the relationship between expectations and outcomes with a prepared delivery.

If you believe that you have suffered an injury or illness as a result of participating in this research or if you have any questions regarding treatment of participants in research, please contact the Office of Grants Management at (301) 295-3303 at the University. This office can review the matter with you and may be able to identify resources available to you. Information about judicial avenues of compensation is available from the University's Legal Counsel, (301) 295-3208.

If you desire additional information about this experiment, either about the rationale for it or its findings, you may call Margaret v. Wideman in the Department of Medical Psychology, (301) 295-3270. In this way, you can make your participation in our research a more informative, educational experience. We welcome your comments and suggestions, and appreciate your willingness to help us.

YOU ARE MAKING A DECISION WHETHER OR NOT TO PARTICIPATE. YOUR SIGNATURE INDICATES THAT, HAVING READ THE ABOVE INFORMATION, YOU HAVE DECIDED TO PARTICIPATE.

_____ _____

SIGNATURE DATE

I was present during the explanation referred to above, as well as during the Volunteer's opportunity to ask questions. I hereby witness the Volunteer's signature.

_____

WITNESS

APPENDIX C

DEMOGRAPHICS QUESTIONNAIRE

ID # _____

AGE _____

MARITAL STATUS(Check one)

single _____
married _____
divorced _____
widowed _____
other _____
(please specify)

EDUCATIONAL LEVEL
(Check highest level achieved)

High school degree _____
Some college _____
College degree _____
Graduate degree _____
Vocational training _____

ETHNIC ORIGIN
(Check one)

Caucasian _____
Afro-American _____
Oriental _____
Hispanic _____
Other _____
(please specify)

RELIGION
(Check one)

Protestant (denomination) _____
Catholic _____
Jewish _____
Other _____
(please specify)

FAMILY INCOME LEVEL
(Check one)

less than $15,000/yr. ____
$15-25,000/yr. ____
$25,001-50,000/yr. ____
over $50,000/yr ____

How long have you lived in the Washington, D. C. metropolitan area?

Do you currently live in the District of Columbia _____
suburban Northern Virginia _____
Montgomery County _____
Prince George's County _____
Other (please specify) _____

Would you describe your residential area as primarily urban _____
primarily suburban _____
primarily rural _____

Was your obstetrical care covered by medical insurance?

| Prenatal | | Delivery | |
|---|---|---|---|
| fully | _____ | fully | _____ |
| partially | _____ | partially | _____ |
| not at all | _____ | not at all | _____ |

What is your due date? _____

APPENDIX D

1. How likely is it that you will receive each of the following? In the space next to each item, write "1" if it is not at all likely that you will receive it during labor or delivery, "2" if it is moderately possible, "3" if it is highly probable, or "4" if you think you will definitely receive it during labor or delivery.

a. mild sedative (i.e., demerol) _____
b. general anesthetic _____
c. spinal anesthetic (i.e., epidural, saddle block) _____
d. local anesthetic (for episiotomy) _____
e. internal fetal monitoring _____
f. external fetal monitoring _____
g. drugs to speed up labor _____
h. intravenous fluids (IV's) _____
i. forceps or suction to help deliver the baby _____
j. coach or husband participation _____
k. Caesarean section _____
l. Other (please specify) _____

2. How important is it to you NOT to receive medication during labor or delivery?

1 2 3 4 5 6 7
very important ... not at all important

3. How important is it to you that your husband actively participates during your labor and delivery?

1 2 3 4 5 6 7
very important ... not at all important

4. Please indicate which activities you would like your husband to do during your labor and delivery (check all that apply).

a. time the contractions _____
b. massage sore areas _____
c. hold my hand _____
d. remind me to relax _____
e. breathe with me during contractions _____
f. bring me ice chips _____
g. encourage me _____
h. Other (please specify) _____

APPENDIX E

1. Was this your first pregnancy? _____
2. Name and address of person who delivered your baby _____
_____
_____
3. Are you under the care of a physician for any chronic health problem (e.g., diabetes, thyroid, high blood pressure) If yes, please specify _____
_____
_____
4. Are you currently on any medications? If yes, please specify _
_____
_____
5. Please list ANY surgical procedures you have experienced (medical or dental), when they occurred, and what type of anesthesia (general or local) used for each _____
_____
_____
_____
6. Which of the following statements, in your opinion, best charcterizes the attitude of your Lamaze instructor?
   a. Medication is unnecessary for coping with the discomforts of labor and delivery.
   b. Lamaze techniques are sufficient for coping with the discomforts of labor and delivery.
   c. Ordinarily, medication won't be necessary, but it some cases it is nice for dealing with extreme pain.
   d. Medication may be necessary to supplement Lamaze techniques for coping with the discomforts of labor and delivery.
   e. Medications may be necessary, but some women can do without them.
   f. Half of the time, women may need medication to cope with the discomforts of labor and delivery.
   g. The use of medication is necessary for coping with the discomforts of labor and delivery.

7. Which of the following statements, in your opinion, best characterizes the attitude of your Lamaze classmates?

a. Medication is unnecessary for coping with the discomforts of labor and delivery.

b. Lamaze techniques are sufficient for coping with the discomforts of labor and delivery.

c. Ordinarily, medication won't be necessary, but in some cases it is nice for dealing with extreme pain.

d. Medication may be necessary to supplement Lamaze techniques for coping with the discomforts of labor and delivery.

e. Medications may be necessary, but some women can do without them.

f. Half of the time, women may need medication to cope with the discomforts of labor and delivery.

g. The use of medication is necessary for coping with the discomforts of labor and delivery.

8. Which of the following statements best characterized the attitude you had before you delivered?

a. Medication is unnecessary for coping with the discomforts of labor and delivery.

b. Lamaze techniques are sufficient for coping with the discomforts of labor and delivery.

c. Ordinarily, medication won't be necessary, but in some cases it is nice for dealing with extreme pain.

d. Medication may be necessary to supplement Lamaze techniques for coping with the discomforts of labor and delivery.

e. Medications may be necessary, but some women can do without them.

f. Half of the time, women may need medication to cope with the discomforts of labor and delivery.

g. The use of medication is necessary for coping with the discomforts of labor and delivery.

10. Which of the following statements best characterizes the attitude you now have?

a. Medication is unnecessary for coping with the discomforts of labor and delivery.

b. Lamaze techniques are sufficient for coping with the discomforts of labor and delivery.

c. Ordinarily, medication won't be necessary, but in some cases it is nice for dealing with extreme pain.

d. Medication may be necessary to supplement Lamaze techniques for coping with the discomforts of labor and delivery.

e. Medications may be necessary, but some women can do without them.

f. Half of the time, women may need medication to cope with the discomforts of labor and delivery.

g. The use of medication is necessary for coping with the discomforts of labor and delivery.

## SUBJECT SELF-REPORT MEASURES

Please rate the degree to which you agree or disagree with the following statements. If you agree strongly, you might pick "1," if you agree, but not strongly, you might pick "2" or "3." If you disagree, you would pick "5," "6," or "7," depending on how strongly you disagree. If you don't really agree or disagree, you would pick "4."

| | Agree strongly | | | | | | Disagree strongly |
|---|---|---|---|---|---|---|---|
| 1. I feel Lamaze preparation is an effective means of reducing the discomfort of labor and delivery. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 2. I will recommend Lamaze preparation to my friends and relatives. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 3. I will use Lamaze preparation for all my future deliveries. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 4. The Lamaze techniques I employed significantly reduced the discomfort of my labor and delivery. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 5. My actions and attitudes were responsible for the outcome of my delivery. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 6. The Lamaze preparation techniques themselves were responsible for the outcome of my delivery. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 7. Some aspect of the obstetrical procedure was responsible for the outcome of my delivery. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 8. My doctor's actions were responsible for the outcome of my delivery. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 9. I will consult the same obstetrician who assisted with my delivery for all my future obstetrical needs. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 10. My overall childbirth experience was | 1 very positive | 2 | 3 | 4 | 5 | 6 | 7 very negative |

11. My labor was

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|
| very painful | | | | | | not at all painful |

12. My delivery was

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|
| very painful | | | | | | not at all painful |

13. Please rank the following in order of how important you feel each is to your delivery outcome. In the space next to each item, please indicate whether it is "1 - most important", "2 - next most important", "3 - third most important", or "4 - least important". Use each number only once and write one number in each space.

the Lamaze preparation techniques _____
my actions or performance _____
my doctor's actions _____
the obstetrical procedures _____

14. Which of the following did you receive during labor and delivery? (check all that apply)

a. mild sedative (i.e., demerol) _____
b. general anesthetic _____
c. spinal anesthetic (i.e., epidural) _____
d. local anesthetic (for episiotomy) _____
e. internal fetal monitoring _____
f. external fetal monitoring _____
g. drugs to speed up labor (i.e., pitocin) _____
h. intravenous fluids (IV's) _____
i. forceps or suction to help deliver baby _____
j. husband or coach participation _____
k. Caesarean section _____
l. Other (please specify) _____

15. To what extent did your husband participate during your labor and delivery?

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|
| not at all | | | | | | very much |

16. Please indicate which activities were performed by your husband during your labor and delivery (check all that apply).

a. time the contractions _____
b. massage sore areas _____
c. holding my hand _____
d. reminding me to relax _____
e. breathing with me during contractions _____
f. bringing me ice chips _____
g. encouraging me _____
h. Other (please specify) _____

17. How satisfied were you with your husband's participation during your labor and delivery?

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|
| very satisfied | | | | | | very dissatisfied |

Please rate the degree to which you agree or disagree with the following statements. If you agree strongly, you might pick "2" or "3." If you disagree, you would pick "5," "6," or "7," depending on how strongly you disagree. If you don't really agree or disagree, you would pick "4."

| | Agree Strongly | | | | | | Disagree Strongly |
|---|---|---|---|---|---|---|---|
| I often feel lonely, like I don't have anyone to reach out to. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| When I am unhappy or under stress, there are people I can turn to for support. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| I don't know anyone to confide in. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| I used to have close friends to talk to about things, but I don't anymore. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| When I am troubled, I keep things to myself. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| I am not a member of any social groups (such as church groups, clubs, teams, etc.). | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| I believe in myself and in my ability to handle new situations without any help from others. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| It is important to me that I have emotional support from friends. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| People should feel comfortable turning to a priest (minister, rabbi) for support and comfort. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| I rarely ask for support from others. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| I don't think people really need other people...they can do just as well on their own. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| As a child I received a great deal of support from my parents. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| My brothers and sisters were supportive of me. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| There were always people around when I was growing up who could | | | | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| help me when I needed it. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| I can turn to my parents or siblings when I am troubled. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| When I don't have my family's support, I feel more anxious about what I am doing. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| I feel comfortable when asking my family for support. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| My spouse does not really provide me with much emotional support. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| My family provides me with satisfaction and a sense of strength. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Even when I feel bad about myself, my friends can cheer me up and make me feel important. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| I have friends who will support me no matter what I do. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| I often feel that my friends will be nice to me regardless of what I am doing or feeling. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| My neighbors make me feel that I am cared about. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| My interactions with my neighbors make me feel important. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| I can always count on my neighbors to help me when I am distressed. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| I often feel that I don't have as much support from people living near me as I would like. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| I wish I had more people to talk to about the way I feel about myself and other things. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| I wish I had more people who would help me do the things I need to get done (driving me places if I need a ride). | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

# APPENDIX H

## INSTRUCTIONS

Below is a list of problems and complaints that people sometimes have. Please read each one carefully. After you have done so please fill in one of the spaces to the right with a check that best describes HOW MUCH THAT PROBLEM HAS BOTHERED OR DISTRESSED YOU DURING THE PAST 2 weeks INCLUDING TODAY. Make only one check mark for each item.

-1-

HOW MUCH WERE YOU BOTHERED BY:

| | Not at all | A little bit | Moderately | Quite a bit | Extremely |
|---|---|---|---|---|---|
| 1. Headaches | | | | | |
| 2. Nervousness or shakiness inside | | | | | |
| 3. Unwanted thoughts words, or ideas that won't leave your mind | | | | | |
| 4. Faintness or dizziness | | | | | |
| 5. Loss of sexual interest or pleasure | | | | | |
| 6. Feeling critical of others | | | | | |
| 7. The idea that someone else can control your thoughts | | | | | |
| 8. Feeling others are to blame for most of your troubles | | | | | |
| 9. Trouble remembering things | | | | | |
| 10. Worried about sloppiness or carelessness | | | | | |
| 11. Feeling easily annoyed or irritated | | | | | |
| 12. Pains in heart or chest | | | | | |
| 13. Feeling afraid in open spaces or on the streets | | | | | |
| 14. Feeling low in energy or slowed down | | | | | |
| 15. Thoughts of ending your life | | | | | |
| 16. Hearing voices that other people do not hear | | | | | |
| 17. Trembeling | | | | | |
| 18. Feeling that most people cannot be trusted | | | | | |
| 19. Poor appetite | | | | | |
| 20. Crying easily | | | | | |
| 21. Feeling shy or uneasy with the opposite sex | | | | | |

-2-

| | Not at all | A little bit | Moderately | Quite a bit | Extremely |
|---|---|---|---|---|---|
| 22. Feelings of being trapped or caught | | | | | |
| 23. Suddenly scared for no reason | | | | | |
| 24. Temper outbursts that you could not control | | | | | |
| 25. Feeling afraid to go out of your house alone | | | | | |
| 26. Blaming yourself for things | | | | | |
| 27. Pains in lower back | | | | | |
| 28. Feeling blocked in getting things done | | | | | |
| 29. Feeling lonely | | | | | |
| 30. Feeling blue | | | | | |
| 31. Worrying too much about things | | | | | |
| 32. Feeling no interest in things | | | | | |
| 33. Feeling fearful | | | | | |
| 34. Your feelings being easily hurt | | | | | |
| 35. Other people being aware of your private thoughts | | | | | |
| 36. Feeling others do not understand you or are unsympathetic | | | | | |
| 37. Feeling that people are unfriendly, or dislike you | | | | | |
| 38. Having to do things very slowly to insure correctness | | | | | |
| 39. Heart pounding or racing | | | | | |
| 40. Nausea or upset stomach | | | | | |
| 41. Feeling inferior to others | | | | | |
| 42. Soreness of your muscles | | | | | |
| 43. Feeling that you are watched or talked about by others | | | | | |

| | Not at all | A little bit | Moderately | Quite a bit | Extremely |
|---|---|---|---|---|---|
| 44. Trouble falling asleep | | | | | |
| 45. Having to check and double-check what you do | | | | | |
| 46. Difficulty making decisions | | | | | |
| 47. Feeling afraid to travel on buses, subways or trains | | | | | |
| 48. Trouble getting your breath | | | | | |
| 49. Hot or cold spells | | | | | |
| 50. Having to avoid certain things, places, or activities because they frighten you | | | | | |
| 51. Your mind going blank | | | | | |
| 52. Numbness or tingling in parts of your body | | | | | |
| 53. A lump in your throat | | | | | |
| 54. Feeling hopeless about the future | | | | | |
| 55. Trouble concentrating | | | | | |
| 56. Feeling weak in parts of your body | | | | | |
| 57. Feeling tense or keyed up | | | | | |
| 58. Heavy feelings in your arms or legs | | | | | |
| 59. Thoughts of death or dying | | | | | |
| 60. Overeating | | | | | |
| 61. Feeling uneasy when people are watching or talking about you | | | | | |
| 62. Having thoughts that are not your own | | | | | |
| 63. Having urges to beat, injure, or harm someone | | | | | |

| | Not at all | A little bit | Moderately | Quite a bit | Extremely |
|---|---|---|---|---|---|
| 64. Awakening in the early morning | | | | | |
| 65. Having to repeat the same actions such as touching, counting, washing | | | | | |
| 66. Sleep that is restless or disturbed | | | | | |
| 67. Having urges to break or smash things | | | | | |
| 68. Having ideas or beliefs that others do not share | | | | | |
| 69. Feeling very self-conscious with others | | | | | |
| 70. Feeling uneasy in crowds, such as shopping or at a movie | | | | | |
| 71. Feeling everything is an effort | | | | | |
| 72. Spells of terror or panic | | | | | |
| 73. Feeling uncomfortable about eating or drinking in public | | | | | |
| 74. Getting into frequent arguments | | | | | |
| 75. Feeling nervous when you are left alone | | | | | |
| 76. Others not giving you proper credit for your achievements. | | | | | |
| 77. Feeling lonely even when you are with people people | | | | | |
| 78. Feeling so restless you couldn't sit still | | | | | |
| 79. Feelings of worthlessness | | | | | |
| 80. Feeling that familiar things are strange or unreal | | | | | |
| 81. Shouting or throwing things | | | | | |
| 82. Feeling afraid you will faint in public | | | | | |

| | Not at all | A little bit | Moderately | Quite a bit | Extremely |
|---|---|---|---|---|---|
| 83. Feeling that people will take advantage of you if you let them | | | | | |
| 84. Having thoughts about sex that bother you a lot | | | | | |
| 85. The idea that you should be punished for your sins | | | | | |
| 86. Feeling pushed to get things done | | | | | |
| 87. The idea that something serious is wrong with your body | | | | | |
| 88. Never feeling close to another person | | | | | |
| 89. Feelings of guilt | | | | | |
| 90. The idea that something is wrong with your name | | | | | |
| 91. Feelings of helplessness | | | | | |
| 92. Having to avoid people | | | | | |
| 93. Feelings of it not mattering when given choices | | | | | |
| 94. Feeling like you really don't care whether you do one thing or another | | | | | |
| 95. sudden noises making you jump or shake badly | | | | | |

Locke-Wallace Marital Adjustment Scale (MAS)

1. Check the star on the scale below which best describes the degree of happiness, everything considered, of your present marriage. The middle point, "happy," represents the degree of happiness which most people get from marriage, and the scale gradually ranges on one side to those few who are very unhappy in marriage, and on the other, to those few who experience extreme joy or felicity in marriage.

* * * * * * *

| Very Unhappy | | Happy | | | | Perfectly Happy |
|---|---|---|---|---|---|---|

State the approximate extent of agreement or disagreement between you and your mate on the following items. Please check each column.

| | Always Agree | Almost Always Agree | Occasionally Disagree | Frequently Disagree | Almost Always Disagree | Always Disagree |
|---|---|---|---|---|---|---|
| 2. Handling family matters | | | | | | |
| 3. Matters of recreation | | | | | | |
| 4. Demonstrations of affection | | | | | | |
| 5. Friends | | | | | | |
| 6. Sex Relations | | | | | | |
| 7. Conventionality (right, good, or proper conduct) | | | | | | |
| 8. Philosophy of life | | | | | | |
| 9. Ways of dealing with in-laws | | | | | | |

10. When disagreements arise, they usually result in:

    Husband giving in ___

    Wife giving in ___

    Agreement by mutual give and take ___

11. Do you and your mate engage in outside interests together?

    All of them ___

    Some of them ___

    Very few of them ___

    None of them ___

12. In leisure time,

    Do you generally prefer to be "on the go"___ or to stay at home? ___

    Does your mate generally prefer to be "on the go" ___ or to stay at home? ___

13. Do you every wish you had not married?

    Frequently ___

    Occasionally ___

    Rarely ___

    Never ___

14. If you had your life to live over, do you think you would:

    Marry the same person ___

    Marry a different person ___

    Not marry at all ___

15. Do you confide in your mate?

    Almost never ___

    Rarely ___

    In most things ___

    In everything ___

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